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ABSTRACT

An analysis of the effect of the Kansas School District Equalization Act (SDEA) of 1973 on public school financing is provided in this consultants' report on behalf of six plaintiff school districts in "Newton United School District 373 et al., v. the State of Kansas." Following an introduction, the second section sets forth the initial framing of the report in the context of the present action, citing analyses of other Kansas lawsuits. Section 3 reviews the broad parameters and features of the SDEA as it particularly affects this analysis, and the fourth section elaborates the framework used to evaluate the SDEA. Section 5 presents a statistical assessment of SDEA performance under selected equity standards--resource accessibility, wealth, neutrality, and taxpayer equity. Conclusions about the relationship between the statistical analysis and actual effects of the SDEA are offered in the sixth section, and a final synthesis is provided in the final section. Findings indicate that public school financing in Kansas is characterized by continued wealth-related opportunity, inequitable enrollment category classification, and a highly differentiated tax load. The recommendation is made to change the equalization formula that defines educational needs by inequitable enrollment categories. Sixteen tables are included. (12 references) (LMI)

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Educational Fiscal Equality in Kansas Under the School District Equalization Act: Consultants' Analysis on Behalf of Newton USD 373 et al v State of Kansas

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September 1991

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EDUCATIONAL FISCAL EQUALITY IN KANSAS UNDER THE SCHOOL DISTRICT EQUALIZATION ACT: CONSULTANTS' ANALYSIS ON BEHALF OF PLAINTIFFS IN NEWTON U.S.D. 373 et al v. STATE OF KANSAS

Consultants' Report

Dr. David C. Thompson
Dr. David S. Honeyman
Dr. R. Craig Wood

September, 1991

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EDUCATIONAL FISCAL EQUALITY IN KANSAS UNDER THE SCHOOL DISTRICT EQUALIZATION ACT: CONSULTANTS' ANALYSIS ON BEHALF OF PLAINTIFFS IN NEWTON U.S.D. 373 et al v. STATE OF KANSAS

INTRODUCTION

In July 1991, Newton Unified School District 373 and co-plaintiffs Hays Unified School District 489, Dodge City Unified School District 443, Arkansas City Unified School District 470, Winfield Unified School District 465, Pittsburg Unified School District 250, Minors and Parents as Next Friends, and Citizens and Residents of these various school districts and counties, through their attorneys requested consultant assistance in evaluating the school finance formula in litigation against the State of Kansas. The investigators, Dr. David C. Thompson, Dr. David S. Honeyman, and Dr. R. Craig Wood designed and conducted the evaluation contained in this report entitled **Educational Fiscal Equality in Kansas Under the School District Equalization Act: Consultants' Analysis on Behalf of Plaintiffs in Newton U.S.D. 373 et al v. State of Kansas.** Consequently, this analysis represents a collaborative design whereby the investigators' interpretation of fact and effect of the Kansas School District Equalization Act (1973, as amended) on public education in Kansas, and in particular on these plaintiffs, has been considered from a scholarly base and from the substantial experience of the authors as field practitioners in various states, including Kansas.

It is hereby noted that the contents of this analysis are the independent impressions and scholarly opinions of the authors and do not imply or express a position of any other organization with which they are affiliated. This analysis may thus not be construed to reflect official or unofficial positions of Kansas State University, the University of Florida, the UCEA Center for Education Finance of which the authors are Codirectors, the University Council for Educational Administration (UCEA) or its member institutions, or any other public or private agency. This analysis is further limited to the scope and accuracy of electronic and written information and/or oral communication provided by the Kansas State Department of Education and the various plaintiff boards of education and their representatives. Further, this analysis is limited to select issues believed to be most appropriate to these plaintiffs' grievances against the state. It is also clearly stated that reference to legal issues may not be construed as other than application of scholarly research to the present controversy and cannot be acted upon absent legal counsel. Finally, while respectful controversy may arise regarding our scholarly opinions, to reach additional conclusions from this analysis without our assistance through further research and data interpretation is inappropriate.

Under the above conditions, this analysis of the effect of the School District Equalization Act on the financing of schools in Kansas and its particular effect upon plaintiffs consists of six parts. First, we set forth the initial framing of the report in the context of the present action, at times reiterating for efficiency's sake applicable arguments from other analyses provided by the authors in other lawsuits in the state of Kansas. Second, we review the broad parameters and features of the

Kansas School District Equalization Act of 1973 as amended (hereafter referred to as the SDEA or the statutory scheme) and as it particularly affects this analysis. Third, we set out the framework for our evaluation of the SDEA with emphasis on application to these plaintiffs. Fourth, we offer a statistical assessment of the performance of the SDEA under selected equity standards as it relates to the entire state as contained in other reports and, in specific, as it applies and is now extended to these particular plaintiffs. Fifth, we state conclusions pertaining to the relationship between the statistical analysis and the actual effects of the SDEA, especially as it applies to these plaintiffs' contention of disparate and inequitable treatment by the statutory scheme. Sixth and finally, we conclude with our synthesis and final observations regarding the effect of the SDEA and enrollment categories on plaintiff school districts.

THE PRESENT ACTION IN CONTEXT

Over the past forty years, more than a hundred challenges to school finance mechanisms have been brought in state and federal courts.[1] In a battle over equal educational opportunity popularly typified by Brown v. Board of Education,[2] few states have escaped litigation as reformers have sought greater equity in the funding of schools on the presumption that fiscal resources have a marked impact on the outcomes of schooling. Beliefs about the effect of resources on educational outcomes have been so intense that reformers have argued fervently that equality of educational

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[1] David C. Thompson. Commentary, School Finance and the Courts: A Reanalysis of Progress. West's Education Law Reporter, 59 Ed.Law No.4, pp. 845-863, 1990.

[2] 347 U.S. 483, 74 S.Ct. 686, 98 L.Ed. 873 (1954).

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opportunity must also encompass fiscal equality in order to be complete, and that the failure to fully equalize fiscal resources is to make a mockery of the equal opportunity mandate.[3] These arguments, supported by intuition, logic, and models of successful litigation, have made a coherent and persuasive case in many states for including education among the fundamental constitutional rights deserving the full and equal protection of the laws in order to effectuate the equality mandate. But although school finance reform has made many gains, the reform agenda is still incomplete. Rather than diminishing with either success or time, reform has again recently escalated as statutory schemes for financing schools have come under renewed attack in many states.[4]

It is the larger history of reform which sets the stage for bringing these plaintiffs under the purview of the court because the broad principles governing equal opportunity are being argued to apply specifically in this instance to the Kansas statutory scheme for financing public education. These issues are especially germane because the plaintiffs have called to question the operation of the SDEA under multiple counts. These counts principally relate to the method of state aid distribution by charging that the state aid formula fails to provide a

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[3]David C. Thompson; Julie K. Underwood; William E. Camp. Equal Protection Under Law: Reanalysis and new Directions in School Finance Litigation. In Spheres of Justice in American Education: The 1990 Yearbook of the American Education Finance Association. Harper & Row, 1990.

[4]Several general arguments contained in the first sections of this report on behalf of plaintiffs led by the Newton school district have been made elsewhere by these authors (*see*, for example, David C. Thompson, David S. Honeyman, and R. Craig Wood. *Fiscal Equity in Kansas Under the School District Equalization Act: Consultants' Analysis on Behalf of Turner U.S.D. 202 in Mock v State of Kansas*). Because the foundational issues are similar except in certain instances and because this study provides expanded research methodology to make application of facts and assertions to these particular plaintiffs, the general arguments are reiterated in early sections of the present analysis for purposes of efficiency and parsimony.

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rational basis for relating state aid to educational needs; fails to establish and provide an adequate and uniform level of expenditures per pupil in the state; fails to provide adequate aid per pupil to meet the educational obligations of the state and each district; denies equal protection to pupils by arbitrarily assigning them in some instances to lower budgets per pupil and aid per pupil on the basis of enrollment size of school districts without a rational basis; and fails to meet state constitutional requirements for uniform and equal taxation and uniform and general operation of the laws by permitting taxpayers in different districts to exert disparate tax effort for the support of schools. From plaintiffs' perspective, the question rests in whether the principle of equalized educational opportunity is uniformly operational in the state, whether an adequate level of funding is provided for all districts, whether equalization in fact is occurring in a state with 304 districts of widely varying characteristics and with widely varying budgets per pupil, whether equalization can genuinely be served by a formula which bases differing levels of reimbursement to school districts on strict adherence to size classifications rather than economic, demographic, and other relevant factors which may also affect the actual price of educational services, and whether there is evidence that students and taxpayers are arbitrarily and unequally disadvantaged by the total operation of the school district equalization formula. It is the contention of plaintiff districts that the school aid formula has not met the equality mandate, that some districts are inadequately funded, that the formula is not uniformly equitable, that the SDEA's recognition of economies of scale is insufficient to address other relevant characteristics, and that the formula results in

disproportionate disadvantage to some students and taxpayers by failing to provide an adequate and equitable scheme of taxation and expenditures.

These issues, among others, establish the context for the present analysis which seeks to statistically and substantively determine certain effects of the SDEA and the use of enrollment categories, both generally and on the plaintiff districts specifically. In so doing, this analysis is predicated on both the scholarly perspective of legal reform in school finance and on common value choices about the meaning of school finance equity in a modern context. Those predominant considerations reflect the general premises that equalized educational services are of benefit to children; that the Kansas Legislature has unmistakably concurred with that concept by the statutory enactment of the SDEA; that the legislature has by its actions through the SDEA and certain other constitutional provisions made implicit and explicit commitments to the concepts of fiscal resource impacts and equal opportunity and equal protection; and that the generally accepted principle by the scholarly community and likewise many courts that resource inputs are the only realistic measure of fiscally defined equal opportunity forces the conclusion that the relationship of wealth to educational opportunity should be eradicated and that a school aid formula should be sufficiently encompassing as to consider all variables known to impact the learning process. Finally, there is a value incorporated into the analysis which suggests that while school aid formulas are constructed in the context of legal, social and political environments and may never be perfect,[5] there is an unwavering expectation that if a state aid mechanism

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[5]William E. Camp and David C. Thompson. School Finance Litigation: Legal Issues and Politics of Reform. Journal of Education Finance, v14, n2, pp. 221-238, 1988.

is to be effective, that statutory scheme should over time eliminate wealth-related disparities and should not operate to the disadvantage of identifiable populations.

The foregoing contentions frame the context of this analysis and are critical to its outcome because they place the State of Kansas and the SDEA into an explicit definition of how equal educational opportunity should operate in regard to every school district and to every child. As these plaintiffs believe that the state is unreasonably discriminatory through the SDEA and the operation of enrollment categories because the districts must compete in an educational marketplace where competitiveness is tantamount to ability to provide educational services under an equal burden to taxpayers, the context of how equity should operate in Kansas must finally frame this analysis. We have therefore explored the SDEA within this context by answering several questions. First, has the SDEA fully eliminated wealth-related educational opportunity? If not, legislative intent in enacting an equalization formula is definitionally violated. Second, are there formula-based inequities in the enrollment category classifications? If so, any inequities should not materially reduce available revenues. Third, are there inequities related to the enrollment categories which in fact unreasonably disadvantage the plaintiffs by their particular enrollment category status? If so, the specific effect on these plaintiffs must be seen as both arbitrary and contrary to full equal opportunity and fiscal neutrality. Fourth, are there differential tax burdens present among various taxpayers in Kansas communities which reflect negatively on the balance of equity, both in adequate revenue generation and equitable distribution of tax load? Fifth, are there districts whose

demographic and financial characteristics should qualify them for special consideration but are ignored by the state aid formula? Sixth and finally, what may be concluded about the operation of the SDEA's effect on the actual delivery of educational services in these districts? If there are differential statistical effects which bear out in real dollars and genuine opportunity, they should not be allowed to stand as a compelling interest or even rationally furthering a legitimate state purpose. These questions, answered in the six-part format described earlier, provide the context which defines both the present action and permits evaluation of the SDEA under commonly accepted principles of school finance equity.

THE PRESENT STATUTORY SCHEME

Prior to the Kansas School District Equalization Act of 1973, Kansas distributed state aid to public schools through a foundation plan. Funds were allocated to school districts based on several factors including years of teaching experience and accumulated college hours of certificated staff, the pupil-teacher ratio of the district, and a county economic index. Under the foundation plan, districts were encouraged to improve educational services through state financial incentives aimed at supporting those elements thought to contribute most meaningfully to educational achievement. With the developing school finance reform agenda of the late 1960s and early 1970s, however, the Kansas school finance plan came under sharp criticism because it perpetuated inequality between wealthy and poor schools, as wealthy districts were better positioned to purchase those resources thought to significantly affect educational quality.

With the onslaught of court cases arising from the state education finance reform movement popularized in 1971 by Serrano v. Priest,[6] the Kansas Legislature began to express concern about the state's school finance scheme and also responded to Caldwell v. State[7] by enacting the Kansas School District Equalization Act in 1973.[8] The basis for the SDEA was to provide an adequate level of funding for school districts, to determine local capacity to pay for educational services, and to recognize the impact of resources on educational opportunity through the principle of state aid in inverse proportion to local ability to pay. A significant shift from the foundation formula which had based state aid on factors favoring wealthier districts, the SDEA reversed the state's role by making the state a larger partner in poorer districts, while decreasing aid to districts whose wealth base was strong.

The operation of the new SDEA called for districts to adopt general fund budgets within basic budget lids determined annually by the legislature. Under the plan, districts were also divided into enrollment categories based on the notion of approximating the costs of doing business. The median actual expenditure per pupil in each legislatively determined enrollment category in the year prior to the SDEA was assumed to be both a function of local choice and representative of an adequate educational program. Although the use of a median rather than mean budget per pupil will later be arguable from an equity perspective, the median was

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[6] 487 P.2d 1241 (Cal. 1971).

[7] Citation omitted.

[8] K.S.A. 72-7030, et seq., (1973).

selected as the factor around which the equalized budget lids would operate because it found the middlemost point in the expenditure distribution and was less sensitive to outliers at either expenditure extreme. After determining the median budget per pupil for the enrollment category, budget lids were applied wherein districts which had spent less in the prior year than the median per pupil were allowed to increase their budgets up to 15 percent over the previous year, while districts which had spent more than the median were permitted to raise their budgets by only 5 percent. This differential in allowable increase, when used in combination with other wealth-related factors weighted in favor of state support for low-wealth districts, was the operationalization of the equalization intent of the legislature to narrow the expenditure gap between wealthy and poor districts and to disengage wealth and educational opportunity with sensitivity to factors influencing higher costs in some districts.

Although slightly oversimplified in the above illustration, the basic concepts of medians and budget lids were the starting point for a complex equalization formula designed to grant aid in inverse proportion to local fiscal capacity. The budget lids allowed each district to determine its legally permitted budget by comparing its proposed expenditure per pupil to the median of its enrollment category to determine its allowable increase and then to derive the district's budget by multiplying the budget per pupil by the fulltime equivalency enrollment (FTE) of the district. Once the district's maximum budget was established, that amount was entered into the SDEA formula in order to determine the state's share. Essentially a process of deducting the legislature's definition of local revenue capacity from the proposed budget on the assumption that deducted amounts truly

represented local ability to pay, the remaining balance would be funded by the state. In the original SDEA of 1973, deductions were made for local property tax revenues, intangibles tax, amounts of state income tax rebated under state law to school districts, and certain federal funds. Those deductions formed the definition of local ability to pay and have been altered by legislative mandate over the years to reflect ongoing debate over how local ability should be defined.

In addition to the obvious intent to equalize educational opportunity, two other factors have particularly distinguished the SDEA by profoundly affecting its operation. The first factor was the equalization of property wealth as a major element in determining local ability to pay for education. The second factor was the establishment of median budgets per pupil based on the enrollment size of the school district. Equalization of property wealth, determined by multiplying district wealth (a legislatively defined combination of assessed property value and taxable income) by a local effort rate (the ratio of the district's budget per pupil to the norm budget per pupil) and multiplying again by a legislatively determined factor tied to legislative appropriation, has intended to place districts on a more equal footing in generating revenue for educational purposes. While the local effort rate has floated with the district's position above or below the median budget per pupil for its enrollment category, and while the legislatively determined factor has changed annually based on estimates of state revenue which in turn has had the actual net effect of causing the local share to respond to state economic conditions, the effect of equalizing district wealth has simply been to provide less state aid to wealthy districts while assuring higher state aid to poorer districts. The

second distinguishing factor of enrollment size in determining median budgets per pupil has been the state's method of recognizing certain cost differentials as seen in Table 1. Although complicated by arguments about the definition of district wealth and attendant problems of uneven property appraisal, these two factors have played an enormous role in state aid distribution, especially as equalized assessments were intended to place taxpayers on an equal footing and as enrollment categories had their basis in expectations of cost differentials.[9]

The joint operation of enrollment category medians and equalized wealth provides the mechanism that defines the local share of each district's allowable general fund budget. When the district's share is subtracted from the maximum allowable budget, the remaining balance of each district's budget is a presumably equalized state aid payment. That state aid payment is an expression of legislative intent. As the SDEA operates, its intent reflects the concepts of an adequate level of funding within an equitable distribution represented by (1) *placing primary responsibility on the state for guaranteeing equal educational opportunity through a legislatively constructed formula intended to eliminate disparities between districts by the joint operation of enrollment category median expenditures and budget lids*, (2) *recognizing cost differentials through the enrollment categories*, (3) *expressing the principle of equal educational opportunity*

[9]Because property appraisal has been tumultuous and because the enrollment categories have often reflected only cost differences related to size, the operation of these two factors has been suspect, with allegations that budgets have been driven more from politics and efficiency than from an equalization perspective. As a consequence, the importance of tax equity and cost differentials has continued to grow since the enactment of the SDEA. Statewide reappraisal of property was recently required by the court. Additionally, the original three enrollment categories have been further subdivided until at the present time there are five categories, with four recognizing higher costs associated with lower enrollments and one category for increased costs associated with the largest districts.

TABLE 1

ENROLLMENT CATEGORIES
1973-1991

School Year	District Enrollment	Median Budget	Adjustment Factor
1973 Enrollment Categories			
I=	Under 400	$936	None
II=	400-1,299	936	-.23111 (E-400)
III=	Over 1300	728	None
1978 Enrollment Categories			
I=	Under 200	$2,062	None
II=	200-399	2,062	-1.280 x (Line 2-200)
III=	400-1299	1,806	-.400 x (Line 2-400)
IV=	Over 1300	1,448	None
1983 Enrollment Categories			
I=	Under 200	$3,258	None
II=	200-399	3,258	2.9 (E-200)
III=	400-1699	2,672	.4146 (E-400)
IV=	1700-9999	2,221	None
V=	Over 10,000	2,221	None
1989 Enrollment Categories			
I=	Under 200	$5,116	None
II=	200-399	5,116	-1.645 (E-200)
III=	400-1799	4,787	-1.125 (E-400)
IV=	1800-9999	3,077	None
V=	Over 10,000	3,329	None
1990 Enrollment Categories			
I=	Under 200		
II=	200-399		
III=	400-1799	DNA	
IV=	1800-9999		
V=	Over 10,000		
1991 Enrollment Categories			
I=	Under 200	$5,343	None
II=	200-399	5,343	-.965 (E-200)
III=	400-1799	5,150	-1.02875 (E-400)
IV=	1800-9999	3,504	None
V=	Over 10,000	3,805	None

in the state. In other words, if the formula is to be held blameless it should be conclusively demonstrable that the SDEA has in fact eliminated the effect of wealth on education, that enrollment categories as a recognition of cost differentials truly facilitate equalization, and that equal tax effort produces equal tax yield under a uniform and efficient system of taxation. If the formula has failed to secure these aims, however, serious questions should be raised when a statutory scheme has operated for nearly two decades without achieving its own definition of equity. It is therefore the next task of this analysis to consider whether the Kansas School District Equalization Act has successfully satisfied its own proclaimed purpose, or whether it has had the negative effect on equal opportunity and equal protection that these plaintiffs have alleged.

FRAMEWORK FOR EVALUATING THE SDEA

The evaluation of equity requires measurement. Implicit in measurement is the selection of objects to be evaluated and the choice of methodologies by which measurement will occur. If the goal of equity is to eliminate disparities over time and to disengage wealth from opportunity, it is imperative to consider a design which both longitudinally describes the performance of a school aid formula and takes into account multiple variables believed to have a significant impact on the educational process.

Three generally accepted principles of equity common to the research literature in school finance are *resource accessibility*, *wealth neutrality*,

and *equal tax yield.*[10] These standards seek answers to critical questions about equity. The resource accessibility standard asks whether students have access to resources to appropriately meet their educational needs. The wealth neutrality standard then asks whether those resources are unacceptably related to local wealth and residence. The tax yield standard finally seeks equity for taxpayers and asks whether equal tax effort results in equal tax yield. These broadbased standards provide a useful framework to assess performance of the Kansas statutory scheme both at the state level and within the individual enrollment categories, and further provide a basis for later considering any differential impact of the state aid formula on the specific plaintiff districts in this lawsuit.

The equity standards must be more defined in order to be measurable. If the finance formula implies state responsibility for the educational system, equity under the *resource accessibility* standard may be evaluated by considering the entire state in looking at the degree of dispersion of wealth and budgets per pupil around some selected point. In the SDEA, the median of each enrollment category is implicitly defined by the state as educational adequacy and the focal point for equity intervention. On the other hand, there is sound logic for considering the distribution of mean wealth and expenditures per pupil because the median and mean may be some distance apart, and it cannot be assured that one approximates the other. If the mean and median are significantly apart, the median can be a false indicator of the true effect of wealth and budget per pupil distributions

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[10]For an excellent indepth treatment of the development of the principles and measurement of equity, see Robert Berne and Leanna Stiefel. The Measurement of Equity in School Finance: Conceptual, Methodological, and Empirical Dimensions. The Johns Hopkins University Press. Baltimore, 1984.

by overestimating or underestimating the actual price of education. Consequently, measures which capture dispersion about both the median and mean are more accurate because separately they may fail to show that variance is too great to provide those in the lower expenditure range with adequate resources.[11] The use of both median and mean-based measures may therefore more sensitively point up resource accessibility violations.

For those students who are below the median or mean expenditure for their enrollment category, and to some degree for those students who are above that measure, answers about resource accessibility point to the second standard of *wealth neutrality* by asking whether their condition is

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[11]This analysis is interested in measures which are based in both the mean and median as indicators of wealth and budget per pupil because we are not convinced that the median as utilized in Kansas is the most appropriate measure. The tools briefly described below take both measures of central tendency into account at various times. The resource equity standard is evaluated by the following measures: Unrestricted range: Highest budget per pupil minus the lowest budget per pupil, yielding the difference in spending. Useful in describing the raw spread of differences. In this research it is used to discuss both wealth per pupil and budgets per pupil. As the unrestricted range increases, the likelihood of inequity increases. This measure was applied to both wealth per pupil and budget per pupil. Restricted range: Captures the range of budgets per pupil after ignoring the upper and lower 5 percents of scores, yielding a value without the effect of unusual cases. Useful in describing the "normal" distribution. In this research it is used to discuss both wealth per pupil and budgets per pupil. As the restricted range increases, the likelihood of inequity increases. This measure was applied to both wealth per pupil and budget per pupil. Coefficient of variation: Defined as the square root of the variance of per-pupil budgets divided by the mean per-pupil budget, the coefficient of variation is a dispersion measure which is less reactive to changes in the mean than is true for some other mean-based measures. The coefficient of variation is a useful tool by deriving a quickly readable score between 0 and 1 where 0 indicates equity. Mean: Defined as the sum of scores divided by the number of scores and therefore sensitive to individual score values, the mean is simply the average. Median: Defined as the middle-most score in a distribution when ranked in order, the median is a highly stable score unaffected by outliers of wealth or budget in a distribution. Standard deviation: In a normal distribution of scores, a bell-shaped curve is expected. With a bell curve, the bulk of scores should lie within $\pm$ one standard deviation of either side of the mean with the remainder outside. As will be explained later, in looking at resource equity a normal distribution should occur and where differences are present, questions should be raised. Post-hoc test for significant differences: A statistical procedure which compares groups against one another for significant differences. In this study it is used in an analysis of variance to determine whether actual expenditures in enrollment categories are appropriately reflected in the legislatively established median budgets per pupil. Skewness: A term, rather than a specific measure, which considers the clustering of scores in a distribution. Useful in our consideration of both the mean and median in wealth and budgets per pupil in Kansas, skewness looks at a normal bell-curve distribution by defining kurtosis--i.e., where does the mean lie in relation to the median. In a normally defined distribution, the mean and median will lie in close proximity. As will become evident later, however, when sizeable skewness exists in a distribution, it raises several questions including, for example, whether the median in Kansas is the most appropriate measure of central tendency in identifying educational needs.

inappropriately linked to local wealth. If in examining the dispersion of resources it is found that wealth and budgets per pupil are positively correlated so that an increase or decrease in local wealth results in an increase or decrease in the budget per pupil, the wealth neutrality standard is violated because opportunity becomes a function of local wealth. If on the other hand it is argued that variations in budgets per pupil are related to a legitimate state purpose such as compensating for differences in certain costs, then tests for significant cost differentials between affected groups should bear out that legitimate differences among pupils in fact exist. If those differences are not statistically significant or are erratic or unrelated to relevant pupil characteristics, both the resource accessibility and wealth neutrality standards are violated because differences are illegitimate and probably wealth-discriminatory. Therefore measures which capture the relationship between wealth and budgets per pupil and which assess differences between groups provide an effective means to evaluate the wealth neutrality of a school finance formula.[12] When inequality as defined by positive correlations between wealth and budget is present or when there are insignificant budget

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[12]As will be described later in the text of this analysis, wealth neutrality is simpler to measure. Consequently, only two statistical tests were utilized: Pearson product-moment correlation coefficient: A measure which examines the movement of one variable in relation to movement of another variable. For example, if a district's wealth per pupil and its budget per pupil move together in the same direction by roughly equal proportions, there is a positive (and possibly suspect) association between wealth and opportunity. Ranging in value from -1 to +1 where positive variations greater than zero are contrary to equity, the Pearson is an effective measure to evaluate fiscal neutrality. In this evaluation, correlations were run between wealth per pupil, budget per pupil, adjusted assessed valuation, and taxable income per pupil. Regression analysis: Regression analysis is a powerful tool for inferring the contribution of individual variables to a total outcome. Wealth per pupil, for example, might be seen as the most powerful predictor of budget per pupil. If so, then wealth neutrality is obviously violated. In the present instance, regression is used to predict the contribution of wealth per pupil, adjusted assessed valuation, and taxable income to budget per pupil. The greatest contribution of regression analysis is confirming the associations suggested by descriptive correlations.

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differences between groups who are nonetheless statutorily divided for state aid and permissible expenditure purposes, the formula becomes suspect and also leads to questions of taxpayer equity.

The third standard of *taxpayer equity* finishes the case for statistical measurement and seeks taxpayer equality by guaranteeing equal tax yield for equal tax effort. If one community can produce higher tax yield with less tax effort than another community which cannot reach that level without a higher tax rate, or if poor communities must tax themselves at a higher rate only to spend less money, the taxpayer equity standard is violated and equal access to educational opportunity is fiscally denied. Consequently, observations regarding tax yield and tax effort are needed to complement other observations about the level of resource accessibility and wealth neutrality in a state. While many complex issues cloud taxpayer equity and make it difficult to measure directly, a useful assessment is possible because the wealth neutrality standard indirectly assesses tax equity and permits other tests for levels of comparative tax burden.

These broad standards, together with the later examination of how the state aid formula impacts individual plaintiff districts, provide the overarching framework for assessing whether equity has been achieved in Kansas. These standards are the basis from which to launch specific tests for equity that assess the SDEA generally and compare plaintiffs and nonplaintiffs in order to answer the six questions asked early in this analysis. Specifically, the framework permits the following analysis which examines: (1) *variations of budgets per pupil*, (2) *variations of wealth per pupil*, (3) *relationships between local wealth and budgets per pupil*, (4) *taxpayer equity*, (5) *whether enrollment categories have a justifiable*

reason for widely differential budgets per pupil, and (6) *comparisons of plaintiff-nonplaintiff districts on important variables such as financial and demographic dimensions.*

PERFORMANCE OF THE SDEA ON RESOURCE ACCESSIBILITY, WEALTH NEUTRALITY, AND TAXPAYER EQUITY STANDARDS

The standards of resource accessibility, wealth neutrality, and taxpayer equity were tested against multiple variables to establish benchmarks for evaluating districts' ability to pay for educational services during the years 1978-91. Resource accessibility was tested by range measures assessing the spread of wealth and budgets per pupil around the medians of the state and each enrollment category. These values are reported as unrestricted and restricted ranges of budgets and wealth per pupil in Table 2. The total distribution was again examined using mean-based measures as reported in Tables 3-5. Table 3 reports means, standard deviations, coefficients of variation, and skewness of budgets per pupil. Table 4 reports the same measures applied to wealth per pupil. Table 5 reports results of tests for significant differences in budgets per pupil among and between the individual enrollment categories. These multiple measures captured the differences in wealth and budgets per pupil across the state and within enrollment categories.

Wealth neutrality was tested by Pearson correlation coefficients of variables commonly associated with local ability to pay for education and by regression equations. Correlation and regression values are reported in Table 6 as correlation coefficients and as variances explaining the contribution of each wealth variable to budgets. The regression analysis

permitted wealth-suspect relationships identified descriptively by correlations to then be stated as cause-and-effect relationships.

Taxpayer equity was finally evaluated by observing the correlation of tax base to per pupil budgets and the estimates of contribution by wealth variables to budgets per pupil as seen in the regression equations. In addition, tests for significant differences in levels of taxation in the state and among the enrollment categories were performed in order to gather a second snapshot of the impact of the formula on the state and on the plaintiff districts.

The joint operation of statistical assessment of the SDEA permitted conclusions regarding how widely wealth varies in the state, whether budgets per pupil vary in tandem with wealth, whether there is a rational basis for different enrollment category median budgets per pupil, and conclusions about whether Kansas taxpayers receive equal tax yield for equal tax effort. If these conditions are not uniformly met, it will be concluded that the SDEA has failed to provide equal educational opportunity to the children of Kansas in violation of their constitutional protections.

Resource Accessibility

Table 2 reports the results of range measures on wealth and budgets per pupil. As the data indicate, the unrestricted range of wealth per pupil has historically been large and has widened over time. Wealth in 1978-79 varied by $258,268 per pupil between the highest and lowest wealth districts. By 1989-90, the gap had widened at the state level to $618,818

TABLE 2

WEALTH AND BUDGET PER PUPIL RANGE MEASURES
FOR THE RESOURCE ACCESSIBILITY STANDARD

	N	UR WPP	% CHG	RR WPP	% CHG	UR BPP	% CHG	RR BPP	% CHG
1978-79									
State	306	$258268	--	$122661	--	$2546	--	$1282	--
0-199	25	209792	--	159887	--	2041	--	1886	--
200-399	62	169997	--	108148	--	1463	--	1078	--
400-1299	159	155144	--	39077	--	1440	--	775	--
1300+	60	106390	--	52583	--	691	--	319	--
1983-84									
State	304	$581914	125%	$268937	119%	$5199	104%	$2363	84%
0-199	36	503998	140%	467917	193%	3900	91%	2713	44%
200-399	68	406857	139%	274197	154%	2298	57%	1567	45%
400-1899	162	292660	N/C	195984	N/C	2186	N/C	861	N/C
1900-9999	34	88419	N/C	59797	N/C	727	N/C	482	N/C
10,000+	4	64715	N/C	8125	N/C	903	N/C	166	N/C
1988-89									
State	303	$588983	1%	$177689	-34%	$6020	16%	$3469	47%
0-199	35	515954	2%	165147	-65%	4711	21%	2898	7%
200-399	68	348353	-14%	190990	-30%	3050	33%	1664	6%
400-1899	156	564194	93%	218415	11%	2557	17%	1129	31%
1900-9999	39	71134	-20%	54912	-8%	1651	127%	836	73%
10,000+	5	104334	61%	36255	346%	495	-45%	495	198%
1989-90									
State	303	$618818	5%	$138052	-22%	$6615	9.8%	$3492	.66%
0-199	35	445312	-14%	120658	-26%	5196	10%	3840	32%
200-399	68	312939	-10%	148552	-22%	3131	2.6%	1649	-.09%
400-1899	156	599074	6%	130951	-40%	2417	-5%	1347	19%
1900-9999	39	74089	4%	58571	6%	1814	9%	708	-15%
10,000+	5	94474	9%	58679	61%	522	5%	441	-10%
1990-91									
State	303	N/A	N/A	N/A	N/A	$7933	20%	$3615	3.5%
0-199	35	N/A	N/A	N/A	N/A	6265	20%	4647	21%
200-399	68	N/A	N/A	N/A	N/A	3693	18%	1669	1.2%
400-1899	156	N/A	N/A	N/A	N/A	2565	6%	1439	6.8%
1900-9999	39	N/A	N/A	N/A	N/A	2092	15%	789	11%
10,000+	5	N/A	N/A	N/A	N/A	536	3%	425	-3.4%

N= Number of districts.
UR WPP= Unrestricted range of wealth per pupil.
% CHG= Percent change between the present and prior time periods.
RR WPP= Restricted wealth per pupil.
UR BPP= Unrestricted range in budget per pupil.
RR BPP= Restricted range in budget per pupil.
N/C= Noncomparable data.
N/A= Not applicable or not available.

or an increase of 139%, a figure at least approximating 1990-91.[13] At the state level, these data indicated that wealth disparity per pupil grew significantly over the extended period 1978-91, a factor which if unmitigated would result in obvious and severe inequality if the SDEA did not fully offset the effects of unequal wealth. Although the SDEA was operational during this period, it was still important to question increasing wealth disparity because growth identifies a widening inequality between school districts which could have a disequalizing effect.

Tracking unrestricted range of wealth per pupil within enrollment categories presented special problems because changes in the number of enrollment categories made exact comparisons in all time periods impossible. Despite these difficulties, several observations were made. First, from 1978-83 wealth disparity increased fairly uniformly across the enrollment categories. Second, the years 1983-91 saw significant changes as the enrollment categories experienced widely different fortunes. Wealth disparity widened in extremely unequal amounts in the first, third and fifth categories while improving in the second and fourth enrollment categories. Third, improvement in Categories III, IV and V reversed beginning in 1989-90. While these data do not confirm corresponding movements in budgets per pupil, they are helpful because they indicate that wealth variations have been sizeable and increasing, that wealth changes have been unevenly distributed, and that unredressed disparities would

[13]Wealth in 1990-91 was not calculated by the state due to changes which set aside the equalization formula. Even the 1989-90 wealth figure must be viewed as underestimating the real disparity, as 1989 figures are post-reappraisal which reduced the value of assessments to actual, rather than adjusted, valuation. Although no wealth figure is directly comparable between 1978 and 1991, it may be assumed that disparity in wealth in true comparable numbers is at least as great as was shown for 1989-90.

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result in highly differential educational opportunity.

Restricted range of wealth per pupil removed extreme outliers, leaving the large bulk of districts for observation. By ignoring districts at the extreme top 5% and bottom 5% of the scale of wealth, the restricted range at the state level and within enrollment categories revealed that while wealth disparity increased during the first half of the 1980s, the period from 1984-91 saw declines in wealth disparity in most categories. Such a result is significant for two reasons. First, because although the state unrestricted range increased fairly sharply for the full period, the restricted range revealed that increased wealth was not widely shared and that the differential was in fact located in only a few districts holding extremely high or low wealth. Second, the fact that not all categories decreased indicated that some categories continued to experience widening disparity--a phenomenon most negatively affecting the fourth category as wealth disparity decreased from 1983-88 (-8%) but reversed in 1989-90 (+6%).[14] While these observations are again not sufficient to conclude that wealth inequality had an impact on educational opportunity, they do indicate that the common argument discounting widespread differences in wealth given SDEA intervention and discounting the claims of certain enrollment categories of highly differential wealth impacts is inaccurate because the data may indicate the opposite.

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[14]Category V also experienced an increase in wealth disparity in 1988-89. However, the increase in Category V should probably be considered as spurious because it is doubtful if a restricted range measure is legitimate with only five districts in the distribution. As explained in the text, calculation of a restricted range would result in removal of two districts from the distribution, with the effect of removing nearly half of the total population. The increase in 1989-90, however, is probably a more accurate reflection because it indicates a new wealth definition in which income plays a prominent part, and serving to point up one example of what will later been seen as significant inequalities between these two categories.

Wealth measures are important to equity, however, only insofar as they bear on budgets per pupil by indicating the relative position of districts to one another on resource accessibility. To more fully assess whether wealth has an impact on budgets, the same measures were used to assess variability in wealth in the state and within the enrollment categories.

To begin the assessment of wealth effects on budgets, Table 2 reports unrestricted range of budgets per pupil. From 1978-83 changes in budget disparity (+104%) at the state level roughly paralleled changes in unrestricted wealth per pupil (+125%). By 1989-90, budget disparity (+9.5%) was increasing nearly twice as fast as wealth disparity (+5%). In 1990-91, the gap in budget disparity had widened significantly, with a disparity of $7,933 (+211%) per pupil over 1973-74. While inflation in the early years of the period no doubt contributed to increased educational costs, the unrestricted range looked at actual disparity rather than growth in budget dollar amounts, assuming all other factors for all districts increased concomitantly. Under these conditions, disparity in wealth per pupil from 1978-83 increased faster than the disparity in budget per pupil, but was reversed from 1983-91 with disparity in budgets per pupil growing faster than wealth disparities. Such a situation indicates that disparity in budgets per pupil has recently responded unfavorably to changes in wealth--a situation which could reasonably occur if high wealth districts increased budgets per pupil faster than low wealth districts. This observation was confirmed in data on both unrestricted and restricted range comparisons of budgets per pupil within enrollment categories. The pattern from 1978-83 showed an increase in wealth disparity accompanied by a modest but significant increase in disparity of budgets per pupil. Experience

from 1983-91 was again considerably different, as most categories saw greater equity in wealth per pupil, but had greater disparity in budgets per pupil. For example, in 1988-89 Category IV saw improved unrestricted wealth disparity (-20%) but saw worsened disparity in unrestricted budget per pupil (+127%). Again, these data indicate a highly uneven pattern in the effect and direction of wealth and budgets which in some instances suggests potentially unfavorable associations.

While increased disparity is generally undesirable, these movements are disturbing when they appear to relate wealth and budgets per pupil and because they may reflect on the operation of the school finance formula. If the SDEA is working properly, budgets per pupil should narrow regardless of whether wealth increases or decreases because the operation of state aid and budget lids should help low spending districts close the expenditure gap. From the data in Table 2, however, it would appear that the formula did not successfully intervene by closing expenditure gaps, leaving the assumption that the formula was either incapable of correcting growing disparity or contributed in some way to the disparity that occurred. Both assumptions appear to have merit, as actual experience suggests that medians and budget lids do not reduce disparity and may actually create inequity because wealthy districts exerting slightly higher tax effort can generate additional revenues and expand the budget per pupil disparity by moving farther above the median, while low-wealth districts within the same category are either forced to exert disproportionate tax effort to keep pace or fall farther behind. Under such conditions, the formula is dysfunctional and actually can prevent districts below the median from closing the gap by failing to give them the resources they need in order

not to dramatically increase local tax effort. From 1983-88 this phenomenon was most evident, as in the fourth enrollment category where the smallest decrease in the restricted range of wealth per pupil (-8%) was accompanied by the largest increase (+73%) in restricted budget per pupil and again under different conditions from 1989-91 as these districts experienced increases in both budget (+9%) and wealth (+6%) disparity.

Although additional analysis is required to more fully evaluate resource accessibility under the SDEA, the median-based range measures in Table 2 permit initial summary. First, wealth varies substantially in the state and within enrollment categories. Second, even when wealth extremes are removed, significant variations remain. Third, per-pupil budgets also vary widely and often in apparent response to local wealth. Fourth, the formula has not fully intervened in this phenomenon because despite the intended inverse relationship of the SDEA on wealth and aid, the two critical indicators of wealth and budgets are so apparently positively linked as to require further tests. Fifth, in the period 1983-91 the fourth enrollment category experienced the greatest potential inequity as it held the most consistent and largest increase in disparity of per-pupil budgets to wealth per pupil. Sixth and finally, the data suggest that the joint operation of budget lids and enrollment category medians may not serve their expected purpose because neither medians nor lids automatically lead to increased equity and in fact may exacerbate disparities as wealthy districts may still pull ahead of poorer districts and as raw difference in budgets per pupil between the different categories has grown rapidly.[15]

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[15] *See* Table 1 where the highest and lowest medians of categories differed by 29% in 1973 but differed by 52% in 1991.

From these observations, it would appear that school districts are subject to considerable variability conditioned by the formula and enrollment category membership--factors which if unmitigated are inimical to a rational relationship to the intent of equalization and equal opportunity.

While large and apparently associated variations on resource measures naturally raise questions, they are still insufficient to conclude that inequity is a characteristic of a school finance formula. They do, however, state a concern that justifies further tests because they imply formula-based problems with resource accessibility, and ultimately wealth neutrality and taxpayer equity. In the case of Kansas, the variations were of such significance as to require further analysis. Because the earlier data indicated the most unusual behavior in Category IV and because all plaintiffs in *Newton USD 373 et al v State* are members of the fourth enrollment category, further inquiry into the distribution of resources and wealth was conducted.

To further understand the relationship between wealth and budgets and because there may be questions regarding the appropriateness of the SDEA's use of the median as the sole basis for defining adequacy and equity in Kansas, additional mean-based tests were run for both the state and the enrollment categories.[16] Data for the years 1983-84, 1988-89, 1989-90, and

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[16]For indepth development of this concept, see David C. Thompson; David S. Honeyman, and R. Craig Wood. "Fiscal Equity in Kansas Under the School District Equalization Act: Consultants' Analysis on Behalf of Turner USD 202 in Hock v State of Kansas." (1990). This argument basically states that the use of both measures (mean and median) in tandem is most instructive, especially if a distribution is not normally shaped. In a normal distribution the mean and median may be expected to be somewhat parallel, but if wealth or budgets are significantly unequal, these measures may grow apart. By using mean-based measures in addition to the median-based ranges, it was possible to describe wealth and budgets in terms of standard deviations from the mean to indicate whether wealth and budgets per pupil are normally distributed, as coefficients of variation which reduce the magnitude of variance to a single score for comparison purposes, and in terms of skewness which also describes the relationship between the mean and median of wealth and budgets with the benefit of indicating in which direction the distribution may be skewed. The skewness factor is probably the most easily understood in that any value over 1.00 reflects an imbalance--in other words, when

1990-91 were tested[17] with the results reported in Table 3 as means, standard deviations, coefficients of variation, and skewness.[18] As seen in the data, the mean budget per pupil grew statewide from $3197 to $4834 (+51%) from 1983-91. The coefficient of variation remained nearly steady, and with skewness shifting downward slightly from 1.46 to 1.40. Varying results, however, were obtained in the analysis of enrollment categories. In Categories I, II, and III skewness shifted significantly, with only Category III indicating a narrowing of the difference between the mean and median budgets per pupil. Category IV, however, reflected both increasing skewness and the highest degree of disparity between mean and median budgets. Category IV had an increase (+44%) in the mean budget per pupil from $2335 to $3366, resulting in a increase in the coefficient of variation from .0634 to .0891, and a shift in skewness from 2.06 to 2.14. Category V, in contrast, delivered the most enviable performance as the mean budget per pupil increased +(52%) from $2541 to $3850, and calculated a drop in skewness to only .38 above the median--evidence that fifth category funding is about on target with educational needs as defined by

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badly skewed, the formula is based on the median when it should be looking at another factor such as the mean. These measures were especially helpful in determining whether the state's reliance on the median and the touted inverse relationship of aid to wealth are sufficient to describe a full definition of equity in the state of Kansas.

[17]Data for 1978-79 was not included in the interest of brevity and completeness and because any present variability may be assumed to be representative of earlier years as well. The years stated in the text are accurate for budgets per pupil, with wealth slightly different by assuming that 1989-90 data is at least true for 1990-91 in that no wealth was calculated by the state for 1990-91 during the off-formula year, making direct analysis impossible.

[18]Skewness of the budget per pupil indicates the relative position of the mean to the median, with a positive value indicating that the mean is greater than the median. The more the mean shifts away from the median, the greater the potential inequity in the distribution of resources available per pupil. The coefficient of variation is used in horizontal equity discussion and is defined as the square root of the variance of the budget per pupil minus the average squared deviation from the mean and divided by the mean budget per pupil. Increases in the coefficient are associated with increased disparity.

TABLE 3

DESCRIPTIVE MEASURES ON BUDGET PER PUPIL
FOR THE STATE AND ENROLLMENT CATEGORIES
RESOURCE ACCESSIBILITY STANDARD

	Mean	Standard Deviation	Coefficient of Variation	Skewness
1983-84				
State	$3197.23	$713.09	.223	1.46
Category I	4485.00	820.33	.1829	.37
Category II	3588.62	388.81	.1083	.59
Category III	2943.81	274.77	.0933	1.11
Category IV	2335.56	148.27	.0634	2.06
Category V	2541.52	95.69	.0377	.13
1988-89				
State	$4388.09	$980.59	.2235	1.03
Category I	6104.89	1045.76	.1713	.08
Category II	4891.90	550.19	.1125	.75
Category III	4127.75	447.89	.1085	-.37
Category IV	3070.53	225.27	.0734	2.28
Category V	3495.48	253.09	.0724	.41
1989-90				
State	$4697.22	1060.43	.2258	1.05
Category I	6582.99	1100.43	.1672	.27
Category II	5211.70	551.58	.1058	.74
Category III	4443.66	459.66	.1034	-.01
Category IV	3249.22	260.47	.0802	1.62
Category V	3738.43	249.26	.0667	.41
1990-91				
State	$4834.33	1125.26	.2328	1.40
Category I	6871.66	1311.46	.1906	.74
Category II	5299.41	558.01	.1053	1.27
Category III	4572.33	474.68	.1038	-.16
Category IV	3366.23	299.87	.0891	2.14
Category V	3849.80	247.33	.0642	.38

special legislative recognition and actual expenditure patterns.

These median/mean movements are significant to budgets per pupil and possible wealth relationships because of their comparative magnitude, their high degree of differential performance among enrollment categories, and their ability to demonstrate a basic weakness of the median as the single best measure of equity in the SDEA. While problems are highly apparent throughout the distribution, for fourth enrollment category districts a particular dilemma arises. First, districts below or close to the median are especially disadvantaged because the state aid formula looks at only one indicator of need (median budgets) while the mean budget reflects higher budget effort than the formula rewards. Consequently, fourth category districts are tied to a state aid formula which according to the data apparently underfunds an adequate level of expenditure. Second, as seen earlier in the discussion on range measures, budget lids and category medians do not prevent higher wealth districts from increasing budgets per pupil faster than low wealth districts. The net effect is that poorer districts may be held near or below the median while wealthy districts are able to pull farther above the median--both across all enrollment categories and <u>within</u> the fourth category. But because this is far more true for the fourth category than for any other enrollment category, districts in the fourth enrollment category appear to be singled out for unequal treatment in that most fourth enrollment category districts may have a difficult time generating enough revenue because aid is based on the lowest of all medians, while the formula further constrains districts from moving toward or above the median.

Because significant problems were seen in the SDEA's sole dependence on the median in determining budgets per pupil, the same mean-based statistics were also used to assess variability in wealth per pupil. If similarly skewed patterns were discovered, the seriousness of formula incoherence would be both confirmed and increased. Again, the analysis considered the state and all enrollment categories as reported in Table 4.

Between the years 1983-89, mean wealth per pupil decreased from $142,919 to $113,682 (-20.4%) for the state as a whole. The coefficient of variation decreased from .64 to .595, but skewness increased from 1.75 to 3.36. Thus although wealth disparity in the state may have declined, wealth in districts above the median increased faster than in districts below the median because the shift in skewness to the right indicated the wealthy districts were pulling away. During the same time, the enrollment categories exhibited especially disparate behaviors. Although mean wealth per pupil in Category I decreased from $284,364 to $186,836 (-34%), skewness increased from 1.32 to 3.16, again reflecting the wealthiest districts pulling above the median. Category II showed similar behavior as mean wealth declined from $176,438 to $131,006 (-26%), but with skewness increasing from 1.14 to 1.95. Category III performance was even more intense, as mean wealth per pupil dropped from $113,838 to $99,331 (-15%) but with a change in the coefficient of variation from .50 to .617 and skewness increasing from 1.14 to 4.69. Categories IV and V, however, again showed the most remarkable behaviors. Even though Category IV wealth per pupil increased from $70,891 in 1983-84 to $74,495 (+5%) in 1988-89 which indicated that the wealth of some districts was increasing, mean wealth per pupil in Category IV was well below the state mean in both years. At the

TABLE 4

DESCRIPTIVE MEASURES ON WEALTH PER PUPIL
FOR THE STATE AND ENROLLMENT CATEGORIES
RESOURCE ACCESSIBILITY STANDARD

	Mean	Standard Deviation	Coefficient of Variation	Skewness
1983-84				
State	$142919	$91851	.64	1.75
Category I	284364	113361	.40	1.32
Category II	176438	82217	.47	.94
Category III	113838	56836	.50	1.14
Category IV	70891	17550	.247	.17
Category V	90100	27133	.0312	-.54
1988-89				
State	$113682	$67655	.595	3.36
Category I	186836	85656	.458	3.16
Category II	131006	58709	.449	1.95
Category III	99331	61291	.617	4.69
Category IV	74495	15344	.206	-.08
Category V	109516	40354	.368	.60
1989-90				
State	$94071	59784	.0635	4.33
Category I	146598	70445	.4805	3.82
Category II	105984	6693	.5092	2.49
Category III	85116	59086	.6940	5.76
Category IV	66697	14964	.224	.32
Category V	57522	16696	.649	.04
1990-91[1]				
State	N/A	N/A	N/A	N/A
Category I	N/A	N/A	N/A	N/A
Category II	N/A	N/A	N/A	N/A
Category III	N/A	N/A	N/A	N/A
Category IV	N/A	N/A	N/A	N/A
Category V	N/A	N/A	N/A	N/A

[1] N/A= Data not available. For 1990-91 as an "off formula" year, no wealth was calculated by the state. Consequently, no change on statistical measures could be observed; however, given other indicators the prior year's values are at least true.

same time, there was a dramatic change in skewness to the negative direction (+.17 to -.08). In other words, in this time fourth category mean wealth per pupil moved below the median. While the actual magnitude of the shift was not great and more closely resembled a normal curve than was true for the other enrollment categories, the shift in skewness to the left of the median was highly significant because the presence of the mean below the median indicated that a majority of districts in this enrollment group were among the lowest wealth districts in the state and that the SDEA would underestimate local wealth by assuming the median value as true.

For 1989-90 and 1990-91, results were less straightforward by introducing new variables to school finance in Kansas through reappraisal, changing from adjusted assessed valuation to assessed value, and with changes in wealth definition that occurred. The combined result of these events gave the appearance in statistical analysis of significant drops in wealth skewness. These results had to be evaluated in respect to how much of the drop in skewness resulted from equity improvement, and how much resulted from comparing unequal factors brought about by legislative changes. In considering these factors, it was determined that actual wealth differential was likely not decreased in that changes were more a function of confounding effects. This is best demonstrated in the data on 1989-90 where despite the decrease in raw mean wealth differences, all statistical measures testing for true differences except the range generally increased. For fourth category districts, this becomes important for two reasons. First, mean wealth historically below the fourth category median indicated an increasing majority of districts whose wealth was dropping in comparison to their peers and possibly other enrollment

categories. Second, significant skewness in both wealth and budgets supports the charge that despite apparent decreased disparity, nothing has changed in that the formula still permits high spending districts to pull above the median while strapping poor districts to an inadequate state aid amount through a median budget per pupil that underestimates actual needs. These factors suggest that disparities in wealth, budgets, and skewness may change in response to one another and that this pattern has continued over a considerable period of time.

Median-based and mean-based measures thus allow for further intermediate summary about both wealth and budgets per pupil. First, there is reason to believe that the SDEA's reliance on the median as the single descriptor of *equity* is an oversimplified view of formula effects because the formula has held fourth category districts to a lower median budget per pupil which is not reflected in actual mean budget behaviors. Second, it appears that the SDEA's reliance on the median as the single predictor of *adequacy* is a poor choice because medians both underestimate and overestimate actual budget and wealth patterns, raising the question of reliability, uniformity, and sufficiency of the SDEA. Third, for Category IV the low median budget per pupil for state aid purposes results in the least equitable performance in the distribution and is further exacerbated by potentially underestimating the cost of education because the high level of skewness between mean and median wealth and budgets per pupil indicates that fourth category districts apparently must spend more than the category median rewards. Fourth, because the median budget per pupil fails to approximate the mean by the greatest amount in Category IV, it is assertable that the fourth enrollment category median used in state aid

calculation may be the most inaccurate of all medians in reflecting the true costs of education. These issues raise the question of discrimination whereby poorer fourth category districts may be prevented from appropriate access to resources to meet their needs. Fifth and finally, the state's reliance on the median as its indicator of adequacy and equity may be in error because it does not appear to measure the most significant behaviors in the distribution. Under these conditions the effect of category medians may be differential treatment unless the statutory divisions can be demonstrably related to genuinely legitimate cost variations.

Because the analysis has thus far indicated a high degree of variation in available wealth and budgets per pupil and because it is integral to plaintiffs' concerns that the fourth enrollment category is held to the lowest median budget per pupil in the SDEA, it was necessary to see whether differing enrollment category medians have a rational relationship to the amounts districts actually budget per pupil. Because it has been widely believed that the enrollment categories were meant to reflect differences in costs of education among districts, tests for significant differences in median budgets per pupil should show that there are in fact differences in actual budget behaviors between the enrollment categories. If on the other hand no statistically significant differences are found, then the higher median of any category could be seen as an unreasonable discrimination by institutionalizing differential treatment under the law. This assertion was examined by using tests for significant differences among and between the budgets per pupil for each enrollment category in the years 1983-84, 1988-89, 1989-90, and 1990-91. The results are reported in Table 5.

Results in Table 5 show that the enrollment categories fail the test for significant differences in all time periods. No significant difference could be found in budgets per pupil between Categories III and V and between Categories IV and V in any time period. This finding is critical because it supports plaintiffs' assertion that legislative justification for higher median budgets per pupil for various categories, especially Categories III and V, has no basis in fact. The evidence argues that there are no differences between Categories III, IV and V--in other words, the costs of those districts are in fact similar and the use of different median budgets per pupil for state aid purposes is unjustified by any demonstrable relationship to actual costs. By this logic, enrollment categories are not effective or rational because they neither accurately reflect the efficiencies of size *or* take into account whatever costs actually make the third, fourth and fifth categories more similar than different. In fact, on the basis of tests for significant differences it may be asserted that the fourth enrollment category is the recipient of disparate and unequal treatment because it spends as much as third and fifth category districts without the attendant state assistance enjoyed by other enrollment categories. If plaintiff districts are later confirmed to exhibit equal or excessive tax effort with less tax yield while still restricted to lower aid and lower median budget per pupil through the state aid formula, the rationality of the formula would be finally debilitated.

Evaluation of the resource accessibility standard through the use of median-based and mean-based measures consistently indicates a high degree of variability in the SDEA and notes differential constraints placed on the fourth enrollment category. It is clear from these tests that uniformity

TABLE 5

COMPARISON OF MEAN BUDGET PER PUPIL
BY ENROLLMENT CATEGORY FOR 1983-84,
1988-89 and 1990-91
RESOURCE ACCESSIBILITY STANDARD

1983-84
Full Model 5 groups f=172.46 p= .0001 Post Hoc Test Results

Category	Mean Difference	Scheffe test
1 vs 2	$896.38	30.35*
1 vs 3	1541.19	112.25*
1 vs 4	2149.44	129.62*
1 vs 5	1943.48	21.82*
2 vs 3	644.81	31.95*
2 vs 4	1253.06	57.10*
2 vs 5	1047.10	6.65*
3 vs 4	608.25	16.68*
3 vs 5	402.29	1.01
4 vs 5	-205.97	.24

1988-89
Full Model 5 groups f=163.12 p= .0001 Post Hoc Test Results

Category	Mean Difference	Scheffe test
1 vs 2	$1212.99	27.82*
1 vs 3	1997.15	91.65*
1 vs 4	3034.06	135.51*
1 vs 5	2609.41	24.38*
2 vs 3	764.15	22.72*
2 vs 4	1821.37	65.05*
2 vs 5	1396.41	7.43*
3 vs 4	1057.22	27.42*
3 vs 5	632.26	1.59
4 vs 5	-424.96	.65

1989-90
Full Model 5 groups f=184.06 p= .0001 Post Hoc Test Results

Category	Mean Difference	Scheffe test
1 vs 2	$1371.29	33.17*
1 vs 3	2139.33	102.16*
1 vs 4	3333.17	158.40*
1 vs 5	2844.57	27.05*
2 vs 3	768.04	20.68*
2 vs 4	1962.48	71.47*
2 vs 5	1473.27	7.67*
3 vs 4	1194.45	33.98*
3 vs 5	705.24	1.84
4 vs 5	-489.21	.81

TABLE 5
(continued)

1990-91
Full Model 5 groups f=164.57 p= .0001 Post Hoc Test Results

Category	Mean Difference	Scheffe test
1 vs 2	$1572.25	35.81*
1 vs 3	2299.33	96.91*
1 vs 4	3505.43	143.82*
1 vs 5	3021.86	25.06*
2 vs 3	727.08	15.22*
2 vs 4	1933.18	56.95*
2 vs 5	1449.60	6.10*
3 vs 4	1206.10	28.45*
3 vs 5	722.52	1.58
4 vs 5	-483.58	.65

* Significant at 0.95

of effect on all school districts cannot be consistently demonstrated in the SDEA, and that enrollment categories do not function to equalize educational opportunity. If in next exploring variability in the context of actual causal associations of wealth and budgets it becomes obvious that the formula has not redressed wealth inequality, plaintiffs' assertions about irrationality and effect of the SDEA will be substantially upheld.

Wealth Neutrality

The second standard of wealth neutrality follows closely, requiring that the relationship between wealth and budgets be at least neutral if not inverse covariants. Although it is observable on its face that state aid under the SDEA is inversely related to local wealth, it is necessary to consider how effectively the link between wealth and budgets per pupil is broken by the SDEA and whether the effects of intervention are uniformly distributed across enrollment categories. If the formula has successfully operated to eliminate residence-related educational opportunity, the link between budgets and local wealth should be uniformly absent throughout the distribution. If the SDEA has failed to break the link, the presence of statistically significant relationships between budgets and wealth at any level would indicate violation of the wealth neutrality standard.

Wealth neutrality was tested by Pearson correlation coefficients of variables commonly associated with local ability to pay for education and by regression equations. Regression analysis permitted suspect associations identified descriptively by correlations to then be stated as causal relationships. Correlation and regression values are reported in Table 6 as correlation coefficients and as variances explaining the

contribution of each wealth variable to budgets.

The data in Table 6 indicate that in most instances there is still a positive relationship between budgets per pupil and wealth at the state level and within enrollment categories. The correlation between budgets per pupil and taxable income has generally been the weakest, with property wealth per pupil having the strongest link, followed closely by total wealth per pupil. The direction and strength of these variables is not surprising in that some combination of the sum of property wealth and income comprise the definition of total wealth, with income representing only a small part of the state aid formula for most districts. This pattern of positive association generally holds true from 1983-84 to 1990-91.[19]. Exceptions to these general patterns again lie in Categories IV and V. Category IV has seen the correlation between income and budget per pupil increase in importance, changing signs from 1988 (-.26) to 1991 (.02). Likewise, Category V has also experienced a significant link between income and budget per pupil, rising from 1988 (.27) to 1991 (.32). At the same time, these two categories have decreasing support from property tax revenues.[20] These data are significant because they indicate that the generally more property-wealthy smaller districts have been able to drive budgets higher at potentially less tax effort and because the larger districts have seen the income component of the wealth definition increase, but without commensurate ability to tax income directly. In

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[19] *But see fn.* in Table 6 explaining adjustments to methodology for comparing these amounts related to changes in wealth definition and off-formula years.

[20] Although separate relationships of budgets to property wealth cannot be singled out beginning in 1989 when only one value for wealth per pupil was reported by the state, this observation is generally true based on trends from prior years wherein property base correlation to budgets per pupil was historically lower than in Categories I, II, or III.

TABLE 6

VARIANCE ESTIMATE
PEARSON CORRELATION COEFFICIENTS FOR
THE PER PUPIL MEASURES OF WEALTH, BUDGET,
ADJUSTED VALUATION, AND TAXABLE INCOME
WEALTH NEUTRALITY STANDARD

Variance estimate (r^2) in parentheses

1983-84

Budget per pupil to:	AJVPP	TIPP	WPP
State	.81 (.65)	.17 (.03)	.81 (.65)
Category I	.70 (.49)	.36 (.13)	.71 (.51)
Category II	.56 (.32)	.37 (.14)	.57 (.32)
Category III	.63 (.41)	.27 (.07)	.64 (.41)
Category IV	.02 (.0029)	-.32 (.11)	-.08 (.01)
Category V	.79 (.62)	.87 (.76)	.82 (.67)

1988-89

Budget per pupil to:	AJVPP	TIPP	WPP
State	.59 (.34)	.08 (.01)	.58 (.34)
Category I	.56 (.32)	.38 (.15)	.57 (.32)
Category II	.51 (.36)	.31 (.11)	.53 (.28)
Category III	.30 (.09)	.03 (.00957)	.30 (.09)
Category IV	.20 (.04)	-.26 (.07)	.05 (.0026)
Category V	.37 (.14)	.27 (.07)	.33 (.11)

1989-90

Budget per pupil to:	TOTAL WPP	ITRebPP
State	.52 (.27)	-.19 (.04)
Category I	.54 (.30)	.08 (.01)
Category II	.61 (.37)	.33 (.11)
Category III	.27 (.08)	.003 (.00014)
Category IV	.31 (.1000)	.04 (.0014)
Category V	-.1 (.01)	.38 (.15)

1990-91

Budget per pupil to:	TOTAL WPP[1]	ITRebPP
State	.60 (.36)	-.19 (.04)
Category I	.61 (.37)	.06 (.003)
Category II	.54 (.29)	.23 (.05)
Category III	.32 (.10)	.02 (.0004)
Category IV	.23 (.05)	.02 (.0004)
Category V	-.21 (.05)	.32 (.1)

[1] Uses 1989-90 numbers for wealth due to lack of state definition. Changes in wealth definition or lack of calculated wealth for certain years made direct comparison impossible. Total wealth per pupil as defined below and income tax rebate per pupil were used as alternative measures of capacity.

AJVPP= Adjusted valuation per pupil
TIPP= Taxable income per pupil
WPP= The sum of AJVPP and TIPP
Total WPP= Total calculation of district wealth after 1988-89.
ITRebPP= Income tax rebate per pupil

comparing all categories, Category IV appears to have experienced the worst scenario in that smaller categories have higher property wealth and higher budgets per pupil, while Category V has much higher income as a driving force behind its higher budgets per pupil. The result leaves Category IV with fairly low property wealth and lower income, but without the ability to lucratively tax property and without ability to tax income at all. These relationships were also demonstrated by the discussion of skewness of budgets and wealth which have left fourth category districts in a highly unfavorable position.

The data on wealth neutrality indicate that while wealth and income correlations to budget per pupil have softened recently, changes have been very moderate and that a generally high link between wealth and school district revenue can be observed. This link was confirmed by further analysis using regression equations developed to causally explain the contribution of property and income wealth variables to budgets per pupil. As seen in parentheses in Table 6, for most enrollment categories wealth neutrality is not strikingly present as assessed valuation has historically been the most significant factor influencing budgets per pupil and as total wealth per pupil in 1991 continues to explain significant linkages between wealth and budgets. At the state level, 36% of variance in budgets per pupil in 1991 could be attributed to wealth. While it may be assumed that state aid is the *other* determinant of budgets per pupil, it is obvious that wealth and resources are still meaningfully linked when correlations are statistically significant and as the regression equations indicate that local wealth is a mainstay in determining whether a district has a higher or lower budget per pupil. The same pattern, although highly unequal,

generally holds for the enrollment categories, as in 1991 wealth explained from 5% to 37% of budgets per pupil. Interestingly, Category IV demonstrated one of the lower total wealth dependencies (.05) and with even lower income tax rebate relationship (.02). In contrast, Category V demonstrated the other low total wealth relationship, but had the highest income tax rebate dependency (.1). These data confirm all earlier arguments, stating that smaller districts have higher wealth and budgets per pupil, that the fifth category has rather intensive income characteristics combined with higher overall wealth and higher state aid through a higher median budget per pupil, while the fourth category has neither property nor income wealth to sustain it. Under these conditions, wealth neutrality is not uniformly present in the distribution and is apparently least accessible to fourth category districts whose funding is badly skewed in relation to the SDEA's assumptions about the sufficiency and accuracy of the enrollment category median.

Taxpayer Equity

The third standard of taxpayer equity was finally evaluated by observing two distinct characteristics relating to potential differences in tax loads in the state and within enrollment categories. First, the correlation of tax base to per pupil budgets and the estimates of contribution by wealth variables to budgets per pupil as seen in regression equations in Table 6 were reviewed for taxpayer equity implications. Second, additional tests for significant differences in levels of taxation in the state and among the enrollment categories were performed in order to gather a second snapshot of the impact of the SDEA on the state and

TABLE 7

COMPARISON OF TOTAL MILLAGE BY ENROLLMENT CATEGORY FOR 1988-89 TO 1990-91

1988-89
Full model 5 groups f=1.72 p=.14493

Post Hoc Test Results

Category	Mean Difference	Scheffe test
1 vs 2	.88	.02
1 vs 3	-3.15	.32
1 vs 4	-5.23	.56
1 vs 5	-9.76	.46
2 vs 3	-4.03	.82
2 vs 4	-6.1	.99
2 vs 5	-10.64	.58
3 vs 4	-2.07	.15
3 vs 5	-6.61	.23
4 vs 5	-4.53	.10

1989-90
Full model 5 groups f=18.86 p=.0001

Post Hoc Test Results

Category	Mean Difference	Scheffe test
1 vs 2	5.16	.63
1 vs 3	.18	.0009
1 vs 4	-18.99	6.87*
1 vs 5	-27.2	3.31*
2 vs 3	-4.98	1.16
2 vs 4	-24.15	14.47*
2 vs 5	-32.36	4.95*
3 vs 4	-19.17	11.70*
3 vs 5	-27.38	3.70*
4 vs 5	-8.21	.30

1990-91
Full model 5 groups f=11.12 p=.0001

Post Hoc Test Results

Category	Mean Difference	Scheffe test
1 vs 2	7.89	2.43*
1 vs 3	5.04	1.25
1 vs 4	-7.1	1.59
1 vs 5	-2.33	.04
2 vs 3	-2.85	.63
2 vs 4	-14.99	9.21*
2 vs 5	-10.22	.81
3 vs 4	-12.14	7.75*
3 vs 5	-7.37	.44
4 vs 5	4.77	.17

* Significant at 0.95

III and V. By 1990-91, changes resulted in significant differences between Categories I and II; II and IV; and III and IV. From these data, it is apparent that differences among taxpayers in Kansas are strongly evident, and that a common denominator is the presence of the fourth enrollment category in any classification by tax differentials. When considered in tandem with other data on resource accessibility and wealth neutrality, it finally becomes apparent that Category IV has experienced the greatest variation in resources, exhibits the strongest unfavorable ties to wealth-driven budgets, taxes its residents at a higher rate than in some other enrollment categories, and receives less state aid and less budget authority per pupil--conditions which make it preeminent in any discussion of differential educational equality in the state of Kansas.

Summary of Statistical Data Analysis

Although additional discussion and data tests reflecting on resource accessibility, wealth neutrality, and taxpayer equity will be provided in the next section, a set of conclusions can be drawn at this point which lead naturally into a direct comparison of plaintiff/nonplaintiff districts on issues of fiscal educational impacts. When the data from Tables 2-6 are considered concurrently with data from Table 7, results of testing the equity standards become strikingly clear. First, any trend toward equity has been moderate because the link between budgets and wealth per pupil is significant. Second, Category IV has generally moved away from equity in the distribution and by the greatest degree. Third, movement on equity achievement has been uneven among the enrollment categories, either *because of* or *despite* the SDEA. Fourth, the enrollment categories do not serve any

rational purpose for discriminating on the basis of differential median budgets per pupil. Fifth, skewness in the fourth enrollment category median and mean wealth and budgets per pupil is harmful because it implies that the formula does not adequately or equitably fund these districts. Sixth, the uneven contribution of wealth to budgets explained in regression equations refutes the common belief that the inverse relationship of the SDEA has equalized education in Kansas. Seventh, the data on taxpayer equity clearly suggest that given covariant wealth and budget relationships that exist in the state, educational equality is highly dependent on the willingness of local residents to forego taxpayer equity by taxing themselves at an unequal rate in order to provide a quality education for their children. For fourth category districts, these conclusions are decisive, leaving only the question of estimating the extent to which plaintiff districts are affected by these findings.

SELECT IMPACTS OF THE SDEA AND ENROLLMENT CATEGORIES ON PLAINTIFF SCHOOL DISTRICTS

The foregoing analysis concludes that resource accessibility, wealth neutrality, and taxpayer equity have not been fully achieved by the Kansas School District Equalization Act. The analysis and conclusions are relevant to *Newton U.S.D. 373 et al v State of Kansas* because the determination of statistical equity also bears directly on educational opportunity in these individual plaintiff districts. It becomes important not only to have seen whether the SDEA is equitable on a general plane, but also to examine its differential impact on the plaintiffs in order to see how the formula's operation actually fails to provide equal educational

opportunity. In the present analysis, this means that evaluation of the formula's effect on Newton Unified School District 373, Hays Unified School District 489, Dodge City Unified School District 443, Arkansas City Unified School District 470, Winfield Unified School District 465, Pittsburg Unified School District 250, and the children, parents, and citizens of these various school districts must be made. In this analysis, these assessments are made on the basis of equal educational opportunity in the context of resource accessibility, wealth neutrality, and taxpayer equity.

Three basic data approaches were utilized using data from 1990-91 except where noted. First, plaintiff districts were compared to all districts in the state on variables reasonably assumed to affect ability to fiscally provide equal educational opportunities. These variables included factors important in the SDEA and community-based factors including comparisons of mean and median wealth, income tax rebate, budget per pupil, enrollment, total tax rate, and demographic variables related to socioeconomic status. Such a grasp of overall relative position of the plaintiffs to the state is helpful because it translates an abstract discussion of statistical equity into specific context. The net result of such a comparison is that if plaintiffs compare favorably to all other nonplaintiffs in the state on basic indicators of ability to provide equal educational opportunity, any disadvantage claimed by plaintiffs would require careful reexamination. If on the other hand plaintiffs compare unfavorably to the state, they would be seen as initially disadvantaged and further subject to any concerns tested later. Second, plaintiff districts were compared to the immediate competitive marketplace on the same factors used in statewide comparisons. The net result becomes that if plaintiffs

are found to be significantly different from their geographic region, a basis for disadvantage attributable to fourth category claims would be further supported. Third, anecdotal records derived from the districts were examined and incorporated into this analysis in order to provide the best estimate of cause and effect relating to the equity analysis generally and the specific geographic marketplace.

Results of the analysis are displayed in Tables 8-16. Table 8 provides the first data approach by comparing plaintiff districts to the entire state on the measures of mean and median wealth, budget per pupil, income tax rebate, enrollment, total tax rate, and demographic variables related to socioeconomic status. Values are expressed as both dollars and percentages of difference between plaintiffs and all other districts where appropriate. Tables 9-10 are companion tables that extend the demographic portion of the analysis by testing the legislative rationale for different enrollment category medians by displaying results of post hoc tests for significant differences on the variables of free/reduced lunch and percent minority students. From Tables 9-10, it was possible to determine if any other enrollment categories are significantly similar to the fifth category which receives additional aid on the basis of socioeconomic disadvantage. Additionally, the composite profile of all contiguous districts is presented in Table 8 on the assertion that bordering districts are the best representation of the marketplace in which any district must finally compete. The underlying argument is that although the contiguous marketplace naturally yields dissimilar districts, a truly equitable state aid formula should redress any dissimilarity under the standards framing this analysis. If the formula fails to provide favorable comparisons of

plaintiffs to nonplaintiffs in the state and contiguous marketplace, then the statistical inequity revealed in the first half of this analysis would be conclusively borne out by actual impacts on school districts.

Tables 11-15 present the second data approach by providing the same analysis on a district-by-district basis. Because plaintiffs are widely scattered geographically across the state and because they are also most often geographically isolated from other fourth category districts, the best comparison rests in testing their fiscal and demographic relationships to their immediate marketplace, particularly since regional cost factors would be on a comparable basis and since the Kansas Legislature used such argument in establishing the fifth enrollment category. By defining marketplace as competition against those districts with whom the plaintiffs have contiguous borders, an assessment of equity within region was made.

Table 16 presents the third data approach by assembling selected results of anecdotal records into a summary of estimated impacts of fiscal and sociodemographic differences described in the state and marketplace comparisons. A series of questions to each individual plaintiff district was posed by the consultants, including queries about the economic and social make-up of the districts; principal tax base; taxpayer profile; student profile; financial status of the district including year-end cash balances, transfers, special fund levies, tax rate, tax delinquency, and special education mandates; effect of the current fiscal crisis in the state; teacher and administrator salaries; pupil-teacher ratios; capital improvements; ability to offer enriched curriculum; and aspects of social or economic disadvantage that apply to the district. Answers to these questions were used to impact the narrative in this portion of the

analysis, and to construct a final impacts section that again argues cause-and-effect of the SDEA on educational opportunity in Kansas.

Plaintiffs v State: Impacts of the SDEA

Table 8 launches the educational impact analysis by providing a profile of plaintiff districts, a profile of the entire state, and a composite profile of all contiguous districts using mean and median values on the variables of wealth and budget per pupil, income tax rebate, enrollment, total tax rate, and demographic variables related to socioeconomic status. Tables 9-10 also apply by extending the demographic analysis to determine if any other enrollment categories are significantly similar to the fifth category which receives additional aid on the basis of socioeconomically disadvantaged students. From these data, conclusions were drawn about the relative status of plaintiffs on these variables.

From the data in Table 8, plaintiff districts are significantly disadvantaged in virtually every category that could result in increased costs to the local district. Using mean-based per pupil figures, mean plaintiff wealth ($69,075) was 36.19% below mean state wealth ($94,071). Mean plaintiff budget per pupil ($3,314) was 45.67% below mean statewide budget per pupil ($4,834). Mean plaintiff unused budget authority ($54,171) was 104.23% below the statewide mean ($110,832). In contrast, mean plaintiff FTE enrollment (3,154) was 56.82% above mean statewide FTE (1,368). Similarly, mean plaintiff tax rate (75.19) was 20.75% greater than the mean for the state (59.59). Significant differences in high cost populations were also observed, as plaintiff districts contained 79.49% more minority population with a median 12.82% minority population compared

TABLE 8

MEAN AND MEDIAN MEASURES FOR THE YEAR 1990-1991

	PLAINTIFF DISTRICTS		STATEWIDE				ALL CONTIGUOUS DISTRICTS			
	MEAN	MEDIAN	MEAN	% DIFFERENCE	MEDIAN	% DIFFERENCE	MEAN	% DIFFERENCE	MEDIAN	% DIFFERENCE
WEALTH/PUPIL	$69,075.07	$68,044.14	$94,071.78	36.19%	$77,941.67	14.55%	$87,279.08	26.35%	$84,732.89	24.53%
INCOME REBATE	$389.08	$386.58	$329.53	-15.30%	$315.73	-18.33%	$310.93	-20.08%	$298.12	-22.88%
UNUSED BUDGET	$54,171.00	$30,047.50	$110,832.69	104.23%	$42,514.00	41.49%	$119,287.52	120.21%	$42,564.00	41.66%
GEN FUND BPP	$3,314.22	$3,269.47	$4,834.33	45.87%	$4,783.97	46.32%	$4,979.08	50.23%	$4,855.45	48.51%
FTE ENROLLMENT	3154.45	3102.9	1388.29	-56.62%	555	-82.11%	477.48	-84.86%	395	-87.27%
TOTAL MILLS	75.19	73.38	59.59	-20.75%	60.73	-17.22%	56.84	-24.40%	56.38	-23.15%
PERCENT MINORITY	12.93%	12.82%	5.52%	-57.31%	2.63%	-79.48%	2.19%	-83.06%	1.86%	-85.49%
PERCENT FREE/R LUNCH	29.17%	28.00%	36.53%	25.23%	27.00%	-3.57%	28.17%	-3.43%	26.00%	-7.14%

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to the statewide median of 2.63%. Plaintiffs also contained 28% of free/reduced lunch recipients compared to a statewide median of 27%.[21] Only income tax rebate per pupil was higher for plaintiff districts, with a mean rebate ($389.06) yielding a 15.3% difference above the state mean ($329.53).

Because of potentially spurious results in comparing factors of socioeconomic disadvantage (see previous footnote) and because of the fundamental argument in this lawsuit regarding the basis for differential treatment in budgets per pupil at the different enrollment category medians, additional tests were run to determine if significant issues relating to high cost populations were reflected in actual presence of such children in school districts. Tests for significant differences between all enrollment categories were run on the variables of free/reduced lunch and percentage of minority students. Table 9 reports the results of post hoc tests between all enrollment categories on the variable of free/reduced lunch, and Table 10 reports results of post hoc tests in all enrollment categories on the variable of percent minorities in Kansas districts.

As seen in Table 9, the results indicate that economic disadvantage so highly touted by fifth category districts as a rationale for creation of the fifth enrollment category has no unassailable basis for differentiating among Kansas school districts at the enrollment category median budget per

[21]Spurious conclusions could result from using the mean on free/reduced lunch and percent minority population because a statewide average groups highly concentrated urban minority populations into a single data set. In this instance, a better comparison is derived by using median values from Table 8 which results in plaintiff districts holding a higher percentage than all other groups because urban outliers are removed. On that basis, plaintiff districts hold 12.82% minority at the median, compared to 2.63% for the state. Similarly, free/reduced lunch is more appropriate at the median, with plaintiff districts holding 28% compared to the state median of 27%. On this basis, the statement in the text is true regarding highest levels in plaintiff districts.

pupil. While the results did not confirm or deny higher costs associated with socioeconomic disadvantage, tests for significant differences did conclude that whatever differences may cause the need to spend higher amounts per pupil for such disadvantage cannot be statistically confined to inner-urban settings on the basis of low income. In contrast, however, Table 10 demonstrates that significant differences do exist among various enrollment categories on the variable of percent minority population, with statistical significance corresponding tightly to increased enrollment size. Because plaintiff districts fall within one of the enrollment categories identified as statistically significant on high cost minority populations and because low income is not statistically any more evident in the fifth enrollment category, it was concluded from the data that current justification for different enrollment categories is weak, that current justification for differential funding is indefensible, and that Category IV schools have further evidence of being wrongly denied the rationale that sparked legislative creation of a higher median for the fifth category.

The comparison of plaintiff districts to the state distribution yielded conclusions that may be summarized as follows. First, Table 8 demonstrates that plaintiff districts are significantly disadvantaged in virtually every category that could result in increased costs to the local district. They are below mean wealth, below mean budget per pupil, and have less unused budget authority. In contrast, plaintiffs have higher enrollments, higher mean tax rates, and have significant differences from lower enrollment categories in high cost populations, while holding no significant differences from the fifth enrollment category on the same variable. Only the dubious advantage of a slightly higher income tax table

TABLE 9

COMPARISON OF PERCENTAGE OF FREE AND REDUCED LUNCH BY ENROLLMENT CATEGORY FOR 1988-89 TO 1990-91

1988-89
Full model 5 groups f=1.58 p=.1793

Post Hoc Test Results

Category	Mean Difference	Scheffe test
1 vs 2	3%	.5
1 vs 3	1.9	.26
1 vs 4	5.52	1.38
1 vs 5	1.27	.02
2 vs 3	-1.09	.13
2 vs 4	2.53	.38
2 vs 5	-1.72	.03
3 vs 4	3.62	.99
3 vs 5	-.63	.004
4 vs 5	-4.25	.19

1989-90
Full model 5 groups f=2.38 p=.0522

Post Hoc Test Results

Category	Mean Difference	Scheffe test
1 vs 2	12.14%	1.69
1 vs 3	10.36	1.56
1 vs 4	14.63	1.99
1 vs 5	7.26	.11
2 vs 3	-1.78	.07
2 vs 4	2.49	.08
2 vs 5	-4.88	.05
3 vs 4	4.27	.28
3 vs 5	-3.1	.02
4 vs 5	-7.37	.12

1990-91
Full model 5 groups f=.19 p=..9456

Post Hoc Test Results

Category	Mean Difference	Scheffe test
1 vs 2	6.08%	.01
1 vs 3	-8.1	.02
1 vs 4	10.93	.02
1 vs 5	7.14	.002
2 vs 3	-14.18	.1
2 vs 4	4.86	.01
2 vs 5	1.06	.0005
3 vs 4	19.04	.12
3 vs 5	15.24	.01
4 vs 5	-3.79	.0006

* Significant at 0.95

TABLE 10

COMPARISON OF PERCENTAGE OF MINORITY STUDENTS BY ENROLLMENT CATEGORY FOR 1988-89 TO 1990-91

1988-89
Full model 5 groups f=24.95 p=.0001

Post Hoc Test Results

Category	Mean Difference	Scheffe test
1 vs 2	-.5%	.03
1 vs 3	-.5	.04
1 vs 4	-8.83	7.49*
1 vs 5	-22.55	12.97*
2 vs 3	.01	.00008
2 vs 4	-7.8	8.61*
2 vs 5	-22.05	13.11*
3 vs 4	-7.81	11.07*
3 vs 5	-22.06	13.69*
4 vs 5	-14.25	5.23*

1989-90
Full model 5 groups f=25.31 p=.0001

Post Hoc Test Results

Category	Mean Difference	Scheffe test
1 vs 2	-.09%	.0001
1 vs 3	-.01	.0002
1 vs 4	-8.33	7.1*
1 vs 5	-22.73	12.4*
2 vs 3	.08	.08
2 vs 4	-8.23	9.03*
2 vs 5	22.64	13.00*
3 vs 4	-8.32	11.82*
3 vs 5	-22.72	13.67*
4 vs 5	-14.4	5.02*

1990-91
Full model 5 groups f=26.42 p=.0001

Post Hoc Test Results

Category	Mean Difference	Scheffe test
1 vs 2	-.59%	.04
1 vs 3	-.53	.05
1 vs 4	-8.91	8.16*
1 vs 5	-23.62	13.45*
2 vs 3	.06	.0008
2 vs 4	-8.32	9.26*
2 vs 5	-23.03	13.52*
3 vs 4	-8.38	12.05*
3 vs 5	-23.09	14.18*
4 vs 5	-14.71	5.27*

* Significant at 0.95

rebate accrues to the plaintiffs in a statewide comparison. That benefit, however, was more than offset in the opinion of the authors by the disequalized operation of the income tax rebate in the SDEA. From the data, it was concluded that Category IV schools have demonstrated a weak wealth posture in relation to ability to pay for education and have further provided proof that they have been illegitimately excluded from the rationale which justified creation of different median budgets per pupil for determining state aid to the five enrollment categories.

Plaintiffs v Marketplace: Impacts of the SDEA

Table 8 and Tables 11-15 present the second data approach by repeating the foregoing analysis on a district-by-district basis within their collective and individual geographic regions. Because plaintiffs are widely scattered across the state, their marketplaces are not comparable. The composite profile of all contiguous districts presented in Table 8 and the individual profiles of plaintiffs and contiguous districts in Tables 11-15 thus assert that bordering districts are the best representation of the marketplace in which these plaintiffs must ultimately compete. Although the contiguous marketplace yields dissimilar districts, a truly equitable state aid formula should fully offset those differences under the equity standards framing this analysis.

From the data in Table 8, the plaintiff districts are significantly disadvantaged on virtually every factor selected to assess marketplace competition. Using mean-based per pupil figures, mean plaintiff wealth ($69,075) was 28.35% below mean contiguous wealth ($87,279). Mean plaintiff budget per pupil ($3,314) was 50.23% below the mean contiguous

budget per pupil ($4,979). Mean plaintiff unused budget authority ($54,171) was 120.21% below mean contiguous unused budget authority ($119,287). In contrast, mean plaintiff FTE enrollment (3,154) was 84.86% above the mean contiguous FTE (477). Similarly, mean plaintiff tax rate (75.19) was 24.4% greater than the mean for the contiguous marketplace (56.84). Significant differences in high cost populations were also observable, as plaintiff districts contained 83.06% greater minority population, with an average 12.93% in plaintiff schools compared to an average 2.19% in contiguous districts. Little observable difference existed in free/reduced lunch factors, with plaintiff districts containing 29.17% free/reduced lunch recipients compared to a contiguous average of 28.17%. Only income tax rebate per pupil favored the plaintiff districts, with a mean rebate ($389.06) yielding a 20.08% differential above the mean rebate ($310.93) for all contiguous districts--a dubious advantage given the lack of property wealth and inability to tax income shown throughout this analysis to apply to fourth category districts. From the composite comparison of plaintiffs/nonplaintiffs in market context, it is observable that the plaintiffs are constrained by a highly uneven playing field.

Tables 11-15 carry the same analysis of the preceding paragraph to an examination of how plaintiff districts compare with their individual contiguous neighbors. Table 11 compares the Newton school district to all districts with which it has a common boundary. Table 12 compares the Hays school district to all districts with which it has a common boundary. Table 13 compares the Dodge City school district to all districts with which it has a common boundary. Because Winfield USD 465 and Arkansas City USD 470 are adjacent neighbors sharing both a common geographic bond and

common marketplace, Table 14 jointly compares those school districts to all districts with which they have a common boundary. Table 15 compares the Pittsburg school district to all districts that border it. All data are comparable based on the year 1990-91.

As seen in Table 11, the Newton school district faces significant disadvantage in competing with its smaller and generally wealthier neighbors. The Newton district has 13.26% less wealth than the mean wealth of its neighbors, has 81.28% more students, has a mill rate higher by 23.75%, has 19.38% more minority students and 25.96% more low income students, while spending 52.1% less per pupil. At the same time, the Newton district has no unused budget authority by which it could choose to increase its level of expenditure. Only income tax rebate is 11.84% higher in Newton--the same dubious benefit discussed earlier whereby an unreachable and disequalized tax benefit is denied to districts like Newton. From the data, it is obvious that Newton reflects a needs and tax profile that does not reflect equal treatment under principles of resource accessibility, wealth neutrality, taxpayer equity and student needs through the SDEA.

Table 12 presents the same analysis applied to the Hays school district. Hays faces similar disadvantages in competing with its smaller and generally wealthier neighbors. The Hays district has 43.56% less wealth than the mean wealth of its neighbors, has 89.7% more students, has a mill rate higher by 38.06%, has 16.73% more minority students and 46.67% more low income students, while spending 62.15% less per pupil. While unused budget authority in Hays is significantly greater, the combination of legal limitations on drawing down unused budget authority and an

TABLE 11

MEAN AND MEDIAN MEASURES COMPARING PLAINTIFF DISTRICTS
WITH CONTIGUOUS DISTRICTS FOR THE YEAR 1990-1991

PLAINTIFF DISTRICT 373

	PLAINTIFF	ALL CONTIGUOUS DISTRICTS		
	ACTUAL	MEAN	% DIFFERENCE	MEDIAN
WEALTH/PUPIL	$67,504.11	$76,456.65	13.26%	$72,101.47
INCOME REBATE	$389.37	$343.28	-11.84%	$347.32
UNUSED BUDGET	$0.00	$0.00	0.00%	$0.00
GEN FUND BPP	$3,303.39	$5,024.34	52.10%	$5,031.90
FTE ENROLLMENT	3204.7	600.02	-81.28%	619.2
TOTAL MILLS	89.77	68.45	-23.75%	70.86
PERCENT MINORITY	5.52%	4.45%	-19.38%	4.82%
PERCENT FREE/R LUNC	26.00%	19.25%	-25.96%	19.50%

TABLE 12

MEAN AND MEDIAN MEASURES COMPARING PLAINTIFF DISTRICTS
WITH CONTIGUOUS DISTRICTS FOR THE YEAR 1990-1991

PLAINTIFF DISTRICT 489

	PLAINTIFF	ALL CONTIGUOUS DISTRICTS		
	ACTUAL	MEAN	% DIFFERENCE	MEDIAN
WEALTH/PUPIL	$77,604.58	$111,406.81	43.56%	$95,281.51
INCOME REBATE	$416.79	$334.88	-19.65%	$317.48
UNUSED BUDGET	$176,124.00	$98,056.80	-44.33%	$93,680.00
GEN FUND BPP	$3,481.96	$5,645.88	62.15%	$5,286.15
FTE ENROLLMENT	3412.1	351.42	-89.70%	370
TOTAL MILLS	74.39	46.08	-38.06%	44.87
PERCENT MINORITY	2.63%	2.19%	-16.73%	1.86%
PERCENT FREE/R LUNC	21.00%	30.80%	46.67%	30.00%

TABLE 13

MEAN AND MEDIAN MEASURES COMPARING PLAINTIFF DISTRICTS
WITH CONTIGUOUS DISTRICTS FOR THE YEAR 1990-1991

PLAINTIFF DISTRICT 443

	PLAINTIFF	ALL CONTIGUOUS DISTRICTS		
	ACTUAL	MEAN	% DIFFERENCE	MEDIAN
WEALTH/PUPIL	$74,197.45	$109,718.79	47.87%	$93,665.50
INCOME REBATE	$373.80	$353.47	-5.44%	$370.81
UNUSED BUDGET	$47.00	$124,389.00	264557.45%	$6,336.00
GEN FUND BPP	$3,231.97	$4,902.85	51.70%	$5,003.32
FTE ENROLLMENT	4114.7	322.66	-92.16%	263
TOTAL MILLS	83.27	54.27	-34.83%	48.77
PERCENT MINORITY	27.60%	1.57%	-94.31%	9.80%
PERCENT FREE/R LUNC	26.00%	25.80%	-0.77%	22.00%

TABLE 14

MEAN AND MEDIAN MEASURES COMPARING PLAINTIFF DISTRICTS
WITH CONTIGUOUS DISTRICTS FOR THE YEAR 1990-1991

PLAINTIFF DISTRICT 470/465

	PLAINTIFF		ALL CONTIGUOUS DISTRICTS		
	USD470	USD465	MEAN	AVE. % DIFERENCE	MEDIAN
WEALTH/PUPIL	$59,803.44	$68,584.17	$75,289.04	17.28%	7.655.26
INCOME REBATE	$327.66	$383.78	$266.70	-25.03%	$258.81
UNUSED BUDGET	$60,048.00	$0.00	$159,771.80	432.15%	$174,180.00
GEN FUND BPP	$3,438.46	$3,289.46	$4,938.31	46.80%	$4,641.30
FTE ENROLLMENT	3001.1	2394.1	310.98	-88.47%	362.3
TOTAL MILLS	72.32	83.27	64.06	-17.66%	61.52
PERCENT MINORITY	15.60%	10.06%	1.83%	-85.74%	2.16%
PERCENT FREE/R LUNC	30.00%	25.00%	31.20%	13.45%	29.00%

TABLE 15

MEAN AND MEDIAN MEASURES COMPARING PLAINTIFF DISTRICTS
WITH CONTIGUOUS DISTRICTS FOR THE YEAR 1990-1991

PLAINTIFF DISTRICT 250

	PLAINTIFF	ALL CONTIGUOUS DISTRICTS		
		MEAN	% DIFFERENCE	MEDIAN
WEALTH/PUPIL	$66,756.69	$54,880.15	-17.79%	$53,133.48
INCOME REBATE	$442.93	$250.77	-43.38%	$248.84
UNUSED BUDGET	$88,807.00	$208,131.25	134.36%	$169,918.00
GEN FUND BPP	$3,139.95	$4,246.54	35.24%	$4,231.58
FTE ENROLLMENT	2800	914.03	-67.36%	941.8
TOTAL MILLS	69.05	52.85	-23.47%	50.83
PERCENT MINORITY	5.02%	1.40%	-72.11%	0.99%
PERCENT FREE/R LUNC	38.00%	33.00%	-13.16%	34.50%

unfavorably high tax rate make accessing this option an unrealistic expectation for the district.[22] Like most fourth and fifth category districts, income tax rebate is the only other factor potentially benefitting Hays as it has 19.65% greater income tax rebate than its property-wealthy neighbors--the same dubious benefit discussed earlier as an unreachable and disequalized tax source. From the data, it is obvious that Hays also reflects significant needs not rewarded by the SDEA.

Table 13 offers a classic template of formula disadvantage by presenting the Dodge City school district. Dodge City also faces significant disadvantage in competing with its smaller and generally wealthier neighbors. The Dodge City district has 47.87% less wealth than the mean wealth of its neighbors, has 92.16% more students, has a mill rate higher by 34.83%, has 94.31% more minority students and .77% more low income students, while spending 51.7% less per pupil. At the same time, the Dodge City school district has only $47.00 in unused budget authority, compared to its wealthier neighbors which jointly hold a mean of $124,389.00, a striking differential. Only income tax rebate is 5.44% higher in Dodge City--the same dubious benefit whereby an unreachable and disequalized tax benefit is denied to districts like Dodge City. From the data, it is obvious that Dodge City reflects a needs and tax profile that does not affirm equal treatment through the SDEA.

Table 14 presents a joint picture of the Winfield and Arkansas City school districts. Because these districts share both a common boundary and common marketplace, simultaneous comparison of these districts to the

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[22] *See* later development of the issue of unused budget authority.

surrounding area is valid. Again, the data indicate that these districts face significant disadvantage in competing with smaller and generally wealthier neighbors. These districts jointly have 17.28% less wealth than the mean wealth of their neighbors, have 88.47% more students, have a mill rate higher by 17.66%, have 85.74% more minority students and 13.45% more low income students, while spending 46.4% less per pupil. At the same time, these districts have 432.15% less unused budget authority than their neighbors. Once again, only income tax rebate is 25.03% higher in the plaintiff districts--the same dubious benefit whereby an unreachable and disequalized tax benefit is denied to districts like Winfield and Arkansas City. From the data, it is obvious that these districts reflect a needs and tax profile that does not affirm equal treatment through the SDEA.

Table 15 presents the Pittsburg school district as the final plaintiff. As with the other plaintiffs, Pittsburg reflects significant disadvantage in competing with its neighbors. The Pittsburg district has 17.79% less wealth than the mean wealth of its neighbors, has 67.36% more students, has a mill rate higher by 23.47%, has 72.11% more minority students and 13.16% more low income students, while spending 35.24% less per pupil. At the same time, the Pittsburg district has 134.36% less unused budget authority than its neighbors. Only income tax rebate is 43.38% higher in Pittsburg--the same dubious benefit discussed earlier whereby an unreachable and disequalized tax benefit is denied to those districts uniquely characterized by fourth enrollment category membership. From the data, it is obvious that Pittsburg reflects a needs and tax profile that does not fit the concept of equal treatment through the SDEA.

The data indicate that when plaintiff districts are isolated into their own regions, the differences permitted under the SDEA are startling. The composite profile identifies a distinct disadvantage by virtue of membership in the fourth enrollment category whereby smaller districts are permitted higher wealth, exert less tax effort, enjoy higher budgets per pupil, and generally receive higher amounts of state aid. Likewise, membership in the largest enrollment category qualifies school districts to access greater wealth, enjoy a higher budget per pupil, collect greater amounts of state aid, and receive legislative recognition and protection for their high cost special populations. In contrast, only the fourth enrollment category demonstrates the greatest formula-based problems. The fourth category is the recipient of the greatest variation in resource accessibility and wealth neutrality in a formula which does not correct for budgets closely related to wealth, and is the further recipient of high tax effort with unequalized yield. Simultaneously, the fourth category is held to a lower median budget per pupil by a formula which recognizes both sparsity and demographics as a reimbursable expense to the smallest and largest districts, while only recognizing size for all other categories. Finally, when geographic marketplace comparisons are isolated, fourth category districts, including these plaintiff districts, suffer real harm under the uneven performance of the SDEA.

As in the earlier discussion of the symbiotic relationship between wealth and budgets per pupil, the ultimate effect of formula disparity plays out in relationships to educational programs in school districts. Consequently, the final stage of this analysis considers cause and effect of the SDEA on these individual plaintiffs.

Plaintiffs v Formula: Cause and Effect

The third data approach assembled select results of anecdotal records into a summary of program impacts of differences described in the state and marketplace comparisons. Questions were posed by the consultants to the individual plaintiff districts, including questions about the economic and social make-up of the districts; principal tax base; taxpayer profile; student profile; financial status of the district in terms of year-end cash balances, transfers, special fund levies, tax rate, tax delinquency, and other variables such as special education mandates; effect of the current fiscal crisis in the state; teacher and administrator salaries; pupil-teacher ratios; capital improvements; ability to offer enriched curriculum; and aspects of social or economic disadvantage that apply to each district. While complete answers to all questions were not received from every district which in turn made detailed analysis impossible on a district-by-district basis, sufficient data were collected to permit general description of the effects of school finance in Kansas on these districts given their individual and collective social and economic climates.[23]

The snapshot of social and economic climates in these school districts is one of inability to cope with increasingly depressed conditions. In most instances, these districts appear to have exercised every available fiscal option to increase resources, while still facing financial problems. Accumulated unused budget authority, generally thought to demonstrate a lack of local tax effort, has offered little leeway to many of these

[23]This segment of the total analysis is based almost entirely on anecdotal records, the accuracy of which is presumed by the consultants. Some data were randomly checked for accuracy and/or gleaned by the consultants from various state department publications.

districts. For example, Newton USD 373 and Winfield USD 465 have no unused budget authority, having fully exercised that option until no more leeway remains. Although Hays USD 489, Dodge City USD 443, Arkansas City USD 470, and Pittsburg USD 250 all have unused budget authority, these districts do not present a picture of failure to tax themselves sufficiently. For example, Hays USD 489 entered the 1991-92 school year with $176,124 in unused budget authority--only the third time in thirteen years that the district has failed to levy its full authority. Failure to levy was not tantamount to a lack of local tax effort, however, as the decision not to exercise the full extent of available authority was the product of a series of catastrophic events in the community, including the 1985 closure of a major industry and continued oil price declines; severe economic depression in 1986 that led to an overall budget freeze; and recognition in 1991 that full budget authority would have required a tax rate increase of more than 22 mills instead of the actual adopted increase of 15.77 mills. Likewise, Arkansas City USD 470 entered the 1991 school year with $60,048 in unused budget authority because while the district's budget per pupil only went up by .13%, the tax levy went up by 37.24%. If the district had chosen to levy its full authority, the tax rate increase would have exceeded 35 additional mills over its already high tax levy. These events are repeated among the various plaintiff districts, providing strong evidence that these districts are not undertaxing their residents.

Demographically, these communities also present a picture of stagnation and socioeconomic problems. Most of these communities have sizeable populations that are aging, and disadvantaged populations are also significantly represented. As seen earlier in the data on free/reduced

lunch and minority populations, the profile of these communities includes a significant proportion of persons who are unlikely or unable to support higher school taxes. Per capita income in Arkansas City, for example, is nearly $2,000 below than the state average. In Newton USD 373, nearly 20 percent of the population is over 65 years of age, and the picture of low income/poverty families in the various plaintiff districts is striking. In Winfield USD 465, for example, 28.36% of all elementary students were receiving lunch subsidies, a figure approximated closely at the middle and high school levels. At the same time, a total of 58 students in the Winfield district were identified as homeless at some point in time during the 1990-91 school year. Repeatedly, the demographic data on individual districts emphasize that the plaintiffs have high cost populations that require expensive services, including substance abuse programs, preschool programs for economically disadvantaged four-year-olds, extended care programs, pregnant or parenting teen support programs, breakfast programs, Head Start programs, and even alternative schools to help troubled youths. These conditions, when combined with a picture of significant tax effort, create a scenario in which the plaintiff districts are faced with formidable problems in staying abreast of their fiscal needs.

At the same time, the financial condition for many plaintiff districts has worsened, especially since approximately 1980. While numerous events related to economic stagnation have helped to account for these problems, districts have faced other problems related to the school finance formula. In most instances, these problems have been directly related to fourth enrollment category membership. Generally, these problems relate to ever-increasing tax effort, imbalance in the formula's definition of wealth, and

decreasing state aid. The result of these events has been declining cash balances and deleterious program effects as almost without exception these districts have had to spend down cash reserves and reduce services. Despite the appearance of increased wealth through the SDEA attributable to a dramatically increased income wealth factor following federal and state income tax reform, the combined effect of the increased income portion and reappraisal of property has been to make these districts look wealthier than they are while shifting the tax burden to real property. These districts have been disadvantaged by disequalized income in the formula which has reduced their state aid and resulted in increased property taxes to make up aid losses. Increases in tax effort have been significant, as in Hays where the general fund tax rate has increased 48.36% during the period 1989-91, rising from 53.18 mills to 78.90 mills only three years. Similarly the Winfield district has seen a tax rate increase from 33.01 mills in 1981 to 76.89 mills for 1991, an increase of 132%. Tax increases would likely have been higher if districts had not exercised a dangerous option of spending down cash balances to offset local tax increases. Hays USD 489, for example, has had little choice in the face of economic decline except to tap cash reserves, seeing its ending cash balance decline from 16.2% in 1988 to 13.1% in 1991.

While it is not argued that the fourth enrollment category has been the sole beneficiary of misfortune or neglect in Kansas, it should be recognized that fourth category schools have been the recipient of the worst of all available fortunes. The issue of declining cash balances, for example, offers one of the better assessments of the problem because while fourth category fund balances have generally followed a pattern of decline,

the same has apparently not been true for all other enrollment categories. As seen in Table 16, data on the 1989-90 school year indicate that the fourth category is characterized by lower year-end fund balances than any of the remaining four enrollment categories.[24] According to Table 16, Category I schools had higher ending general fund balances per pupil ($1,808.07) than Category IV schools ($473.04), a difference of 359.7% less resources available to Category IV schools. The same was true for capital outlay fund balances, as Category I schools' ending balance ($1,043.60) was 504.8% higher than for Category IV schools ($172.56). Category II schools also had higher ending general fund balances per pupil ($1,222.95) than Category IV schools, for a difference of 210.9%. The same was true for capital outlay fund balances, as Category II schools' ending balance ($780.74) was 352.4% higher than for Category IV schools. Category III schools' ending general fund balances per pupil ($864.75) were 119.8% higher than Category IV schools, and Category III capital outlay fund balances ($557.64) was 223.2% higher than for Category IV schools. Finally, Category V schools also finished the year with higher balances in both general fund ($473.04) and capital outlay ($179.18), for percentage differences of 20.3% and 3.8% respectively. In a cash balance scenario such as the foregoing, it requires no additional analysis to understand that if the current practice of reducing cash reserves to offset future tax rate increases continues, the pattern of low resources will reach a point of unmanageability.

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[24] Source: a study conducted by Hays Unified School District 489. Contents of that study are excerpted and reanalyzed in Table 16. No data on these fund balances were provided to the consultants on the state-produced data tape, leaving the assumption that the Hays study accurately represents actual figures from each school district in Kansas.

TABLE 16

PERCENT DIFFERENCE BETWEEN
CATEGORY FOUR MEAN YEAR-END BALANCES
IN SELECT FUNDS
1989

Category	End Bal GF	Pct Diff to EC-4	End Bal All Funds	Pct Diff to EC-4	End Bal Cap.Out.	Pct Diff to EC-4
I	$1808	-359.6%	$2836	-392.7%	$1043	-504.8%
II	$1223	-210.9%	$1866	-224.2%	$781	-352.4%
III	$865	-119.8%	$1277	-121.9%	$558	-223.2%
IV	$393	--	$576	--	$173	--
V	$473	-16.8%	$764	-32.7%	$179	-3.8%

Category= Enrollment category
End Bal GF= Reported ending balance of the general fund
Pct Diff to EC-4= Percent difference between fourth enrollment category ending balance and each other category
End Bal All Funds= Combined ending balance of all funds
End Bal Cap.Out.= Ending balance of the capital outlay fund.

Comparisons showing fiscal disadvantage to fourth category schools could be repeated endlessly. Even more important, however, is discussion of how fiscal disadvantage is causing educational program concerns. Responses by plaintiffs to the consultants' questions about program effects revealed substantial losses to students. Repeatedly, plaintiffs report difficulties in obtaining sufficient monies for adequate staffing, teaching materials and supplies, and programs including those associated with early childhood and at-risk or socioeconomically disadvantaged children. For example, the Hays district reports inability to provide enough elementary counselors and librarians in the district, despite the fact that more than 20 percent of elementary children are identified as being at-risk. The district also reports failing to fill several vacant teaching positions, reducing professional staff inservice budgets, inability to update textbooks on less than a seven-year rotation basis, averaging only $122.00 per teacher annually for instructional budgets, using old buses in excess of 150,000 miles, and many other such effects of fiscal restraint. Similarly the Arkansas City school district reports closing an elementary school and leaving staff vacancies unfilled as a response to inadequate resources, taking money from regular education to recover a 20% state reduction in special education funding, and reducing non-salary expenditures by at least 10% in 1991 to make up for budget shortfalls. These plaintiff districts are also often strapped by growth, as in Winfield's instance where voters have seen tax rates increase sharply since 1981 and have also had to approve $2 million in bonds in 1985 for new facilities and another $1.4 million again in 1989 for asbestos abatement. These and other instances of short resources abound in the responses by

individual plaintiff districts. From the responses to the consultants' queries, it would appear that there is cause for concern about how school finance in Kansas is related to disequalized educational opportunities.

Summary

The sum of these observations allows for some market conclusions. First, it can be seen that the plaintiff districts exhibit substantial tax effort while spending less per pupil. Second, it can further be noted that the state aid formula does not fully offset that effort because even under the SDEA's inverse relationship of state aid to wealth, the tax rate in each of these districts compares unfavorably to their wealthier neighbors. Third, it is obvious that these fourth category districts educate fewer children on fewer dollars per pupil than is true for all fifth category districts, and on fewer dollars per pupil than the smaller enrollment categories. Although the picture is extremely complex and interdependent, the result becomes that these plaintiffs hold less wealth, exert higher tax effort, are permitted less revenue because of the formula's blind focus on enrollment size, hold demographics of disadvantage, but are simultaneously forced to educate fewer children on a lower budget per pupil. At the same time, all other enrollment categories are permitted access to more resources through greater wealth and a higher median budget per pupil with less actual tax effort. From numerous perspectives, these plaintiffs and all others similarly situated clearly suffer both a statistical and a substantive inequality through the SDEA and the enrollment categories.

The difference in bottom lines, according to statements by district officials, is a substantially restrictive effect on education by sole

virtue of fourth enrollment category membership. The plaintiffs charge that the operation of the lower median has not only resulted in inability to compete in their respective economic marketplaces, but has also had direct effects on educational programs, including reductions and deferrals of needed instructional staff, supplies and equipment, facilities, and educational programs of nearly every description. From the statistical and substantive analysis of the formula and its effects on these plaintiffs, it appears that the SDEA and the enrollment categories have served to the specific disadvantage of equal educational opportunity for the 129,519.6 schoolchildren who lived in fourth enrollment category school districts in the 1990-91 school year.

CONCLUSIONS OF FACT AND OPINION ABOUT THE EFFECT OF THE SDEA AND THE FOURTH ENROLLMENT CATEGORY ON PLAINTIFFS

This analysis began by asking six critical questions about school finance in Kansas. We first asked whether the SDEA has fully eliminated wealth-related educational opportunity. The answer is clearly negative. Our second question was whether there are formula-based inequities in the enrollment category classifications. The answer is emphatically affirmative. The third question asked if are there inequities related to the enrollment categories which in fact unreasonably disadvantage the plaintiffs by their fourth enrollment category status. From the data, we responded that the plaintiffs are among the worst affected in the state of Kansas. Our fourth question asked whether there are differential tax burdens present among various taxpayers in Kansas communities which reflect negatively on the balance of equity, both in adequate revenue generation

and equitable distribution of tax load. Our answer, while widely applicable to all districts in the state, affirmed a highly differential tax load throughout Kansas under the current SDEA. The fifth question then asked if there are districts whose demographic and financial profiles should qualify them for special consideration but are ignored by the state aid formula. Our answer renewed and confirmed our earlier attack on fourth enrollment category irrationality by adding further proof of unequal treatment. Our sixth and final question asked what may be concluded about the operation of the SDEA's effect on the delivery of educational services in plaintiff districts. Our answer pointed to a litany of issues and confirmed that many such problems have their roots in the SDEA.

That these districts are not equal to their wealthier and better aided neighbors is ultimately the overriding finding of this analysis. In our opinion there is little doubt that regardless of whether the statistical arguments are unassailable or whether the actual differences are so great as to be unconscionable, the inescapable fact remains that there are genuine differences and that these districts must compete in a marketplace where fourth enrollment category membership means less money, greater tax effort, and generally less state aid. While we have been plain in other writings about the merits of the SDEA, we reaffirm again that on this plane the state aid formula is unreasonably and arbitrarily discriminatory because it takes a set of school districts which have suffered misfortune at the hands of wealth shifts, that are generally poorer than their neighbors, which exert significant tax effort, which spend less per pupil than their neighbors, and which demonstrate the same demographic characteristics for which other enrollment categories are awarded higher

funding, and forces them into an ill-fitting model of efficiency without granting the same concern for equal opportunity that it extends to both smaller and larger districts which are often simultaneously wealthier. When these observations are linked to the abysmal and uneven statistical performance of the SDEA on the standards of equity that frame this analysis, the outcome is a statutory scheme which certainly does not meet the demands embedded in a fundamental right to education, and cannot even be considered rational because it is not consonant with equitable or adequate financing for public schools. While many systems for financing schools have been proven far worse, it must be an unmistakable conclusion in this analysis that pious complacency cannot substitute for true equal educational opportunity for every child in the state.

In the scrutiny of this analysis, it has been implicit that we believe changes are necessary if the school district equalization act is to truly provide equality of educational opportunity to Kansas schoolchildren. Under the conditions of equity set forth early in this analysis, an equalization formula should uniformly eliminate wealth-related opportunity over time, and it should further devote all its energies to eradicating those factors which do not further the goal of equality. It is therefore our firm premise that an equalization formula which does not meet these criteria must be changed. Yet in impugning the SDEA, we recognize our responsibility to participate in its reconstruction, rather than merely presiding over its demise. As a consequence, we are prepared to offer several guiding principles to which we believe a new formula must adhere if it is to serve as an exemplar to sound school finance theory in the context of equal educational opportunity. A new formula for Kansas demands that

our state must become a lighthouse to the nation by holding up children as our greatest hope for the future. Our new formula must offer them renewed hope born of dedication to equality of opportunity. If educational opportunity is to become more than a goal in Kansas, a new school finance scheme must be constructed which is based on EQUAL EDUCATIONAL OPPORTUNITY, and funded by a tax system which unswervingly adheres to EQUALIZATION BY ABILITY TO PAY and EQUAL TAX EFFORT. It is imperative that any new formula eradicate the inequities of the present system and substitute new revenue sources. At the very least, a new scheme should eliminate the current disequalizing income tax rebate, consider funding the state's share from a progressive system of income taxes, demand no less than statewide uniform property tax rates, and care for districts' capital outlay needs. While many other admirable facets can be imagined and indeed should be included, the foundations of an equitable state aid formula must begin with these simple principles and be accompanied by sincere commitment to principles that will bring equal educational opportunity to every child.

While we are saddened that this lawsuit has brought friends into conflict and divided old loyalties, we believe it has provided a rare chance to build for the future. Above all, we are firm in our conviction that the current formula disadvantages many Kansas children, and we are equally firm in our belief that equal opportunity will not be achieved until corrections in the school finance formula are made. It is to that end that this study has been constructed.

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